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Some Economic Aspects of the U. S. Health Care System

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Executive Summary
of
Some Economic Aspects of the U. S. Health Care System

This report provides an economic perspective on selected aspects of the United States health care system. Three general topics are addressed: (a) the evolving structure of the medical care market toward increased competition; (b) consequences of economic behavior induced by incentives that originate in the medical care sector; and (c) the role of the government in health care. The report complements a recent Treasury Department study, *Financing Health and Long-Term Care*.

Three major developments characterize the U. S. health care system over the past 45 years: a rapid diffusion of private health insurance (1945-1960); a rapid increase in public health insurance (1965-1975); and the emergence of competition in the medical care and health insurance markets (1975+). These developments reflect varying emphases on three objectives underlying the American system: maintaining *cost control*, securing *equal access* to health care, and assuring a high degree of *quality* in the delivery of health services.

The three objectives create tensions that render their simultaneous satisfaction very difficult to achieve. Efforts at cost containment are motivated by developments such as rising employer health care costs and growing Federal and State expenditures on health care. At the same time, a large number of Americans lack adequate health insurance and many persons remain exposed to short- and long-term catastrophic health care expenses.

This report provides a perspective and poses questions and concerns about some of the health care problems currently confronting policymakers. The main points can be summarized under the three general topics addressed in the report.

(a). *The Evolving Structure of the Medical Care Sector*

- The medical care market is characterized by imperfect competition, imperfect information, third-party payers, and an unusual seller - purchaser relationship. Medical care services can be distinguished by the relative degree of information possessed by sellers and purchasers.

- Moral hazard in the health insurance market arises because insurance lowers the apparent price the insured has to pay for additional or higher quality medical care, causing the consumption of medical care to be greater than if the full price were paid directly. The problem is more evident in health insurance than other forms of insurance due to the difficulty in objectively defining the state of illness and the consequent need to base insurance benefit payments on the amount of medical expenditure. Moral hazard has a quantitative dimension (too much medical care) and a qualitative dimension (too-high quality of care). The result is upward pressure on the price and quantity of health care.

- The medical care and medical insurance markets are becoming more competitive, facilitated by Federal initiatives in the application of antitrust laws in the physician services market and in the loosening of restrictions on prepaid health plans. Managed care systems are continuing to develop. These systems emphasize provider incentives more than do traditional fee-for-service plans, and they enhance the monitoring and measurement of treatment outcomes. As a consequence, the information market is improving. Because much of the change in the health care sector has occurred quite recently, the consequences have not yet been fully evaluated.

(b). Consequences of Economic Behavior in the Medical Care Market

- The escalation of health care costs has particularly serious implications for Federal finance. Health care expenditures account for about 15% of total Federal outlays. Medicare Part A expenditures are projected to rise dramatically as a percent of GNP over the next 40 years. Medicare Part B also is projected to grow faster than the economy and could eventually become the largest social insurance program. Medicaid expenses also are projected to grow as the population ages and the demand for long-term care rises.

- The increasing relative importance of the U. S. health care sector is part of a general trend among industrialized nations. For 21 OECD countries, the health expenditure/gross domestic product share rose from 3.9% in 1960 to 7.5% in 1987. The growth in the proportion of GDP devoted to health care slowed significantly between the 1965-75 and 1975-87 time periods. During the earlier period, the share for twelve OECD countries was growing faster than in the United States; during the more recent period, the U. S. share grew faster than for most other countries. International comparisons suffer from severely inadequate data, particularly on health care treatment outcomes.

- The public share of total health care expenditures increased significantly during the period 1960-1975 for most OECD countries. Beginning around 1975, the public share stabilized in most countries, or even declined slightly. The OECD data suggest some common experiences in the behavior of health care expenditures across countries. The health care systems are quite different, however, and specific comparisons are extremely difficult to make.

- Medical care price inflation has been an important factor in health care expenditure growth, in the United States and other countries. Real expenditure change (population and utilization) has grown historically, resulting in a widening real health care expenditure-real GNP gap. Health care expenditures are thus absorbing an increasing share of the nation's resources. Most of the real expenditure change in the United States and other OECD countries has occurred in utilization growth.

- Private and public insurance programs have grown rapidly over the past thirty years. One consequence is that, because of moral hazard, the demand for health care has been

larger than otherwise, thereby contributing to rising health care expenditures. Though agreement exists on the direction of the insurance effect on health care expenditures, much uncertainty surrounds its magnitude. Recent evidence suggests that the insurance effect on the *demand* for health care has been modest. Further research is needed to quantify the extent of the insurance effect on the *provision* of health care.

- The tax subsidy to private health insurance reduces the price of insurance, thereby resulting in increased health care consumption. The value of the subsidy rises as taxable income increases.
- Medical malpractice, the threat of malpractice suits, and malpractice insurance influence health care costs in several ways. Insurance operating costs, legal costs, and the practice of defensive medicine impart upward pressure on costs. Yet, a well-functioning malpractice system is desirable in protecting health care providers from risk and in ensuring appropriate care by deterring negligent behavior. The malpractice insurance market is quite complex, precluding simple prescriptions for reform.
- Public and private sector efforts at cost containment have produced some success in limiting health care expenditure increases, though the effects may be temporary. For the public sector, regulation of suppliers (through the Prospective Payment System) temporarily reduced the provision of hospital services; for the private sector, evidence indicates that insurance copayments and prepaid health plans curtail utilization to some extent.
- Approximately 85% of the U. S. population has some form of health insurance coverage. The remaining 15% lack insurance for a variety of reasons. For some persons, nonpurchase of insurance may be a rational decision. Disagreement exists over appropriate strategies for expanding health insurance coverage. Further research may help to quantify the relative importance of reasons why people lack insurance.
- Most elderly lack private insurance coverage for long-term care. An essential difficulty is the lack of reliable definitions and measures of the need for long-term care. For some higher-income persons, nonpurchase of long-term care insurance may be a rational decision.

(c). Government's Role in Health Care

- All levels of government are involved in all aspects of health care to some extent, including financing, delivery, and regulation. The Federal government's role in financing health care is concentrated Medicare, Medicaid, and tax expenditures for the purchase of private health insurance.
- Most states have laws that mandate specific coverages for health insurance plans, and the number of such laws has increased significantly in recent years. Mandated benefits often include high-probability, low-cost events (e. g., dental care). For a given level of premium

expenditure, therefore, it may not be possible to offer plans that both meet the mandates and provide catastrophic coverage.

- Government health care policy unavoidably impacts the private market. An example is the interaction that arises from the tax exclusion of health insurance premiums and moral hazard in the health insurance market. The consequence is additional demand for health insurance and added pressure on health care costs.
- Medicare's attempts to control costs through higher copayments may be offset by additional Medigap insurance. Also, Medigap insurance results in higher hospital and physician utilization, resulting in higher benefits that are not reflected in either Medigap or Medicare premiums.
- The Medicare program has high front-end coverage (and a low deductible) but lacks the stop-loss features common to private health insurance plans.
- In addressing access issues such as the number of uninsured, long-term care, and acute catastrophic care, careful attention must be given to objectives. It will be important to distinguish targeted groups and to further investigate the reasons some groups do not purchase private insurance.
- The government can play a significant role in providing research and information in order to reduce uncertainty in the health care sector. Examples include improved information on the characteristics of the uninsured and assistance in defining and forming risk pools.

I. Introduction

The medical care industry is rapidly gaining the attention of policymakers. In his 1990 State of the Union Address, President Bush assigned Secretary of Health and Human Services Louis Sullivan the job of heading a Domestic Policy Council effort to address the issues of cost containment, access, and quality in health care. The extant Social Security Advisory Council also is addressing those issues and will report later this year on its findings. A bipartisan commission appointed by President Reagan (the "Pepper Commission") recently issued a set of recommendations for reforming the U. S. health care system and Congress has before it a large number of legislative proposals for reforming all or selected aspects of the health care system. Other proposals are certain to follow, as broad-based agreement has not yet been reached on how to deal with the seemingly polar problems of access and cost containment.

All approaches to reforming the health care system involve a host of important economic issues. These issues will need to be considered by the Treasury Department and any other Government agency concerned with economic policymaking. One purpose of this report is to contribute to that process by providing an economic perspective on selected aspects of the U. S. health care system. Three general topics are addressed: evolving structural changes that have led to increased competition in the medical care and health insurance markets; the effects on economic behavior of incentives originating in the two markets; and the role of the public sector in health care.

The report does not provide new evidence on health care issues nor does it make recommendations for reform. The approach taken is to review historical data in conjunction with published research on several of the major issues currently confronting health care policymakers. Finally, the report is not intended to be comprehensive and most of the issues addressed deserve much more attention than given here.

The remainder of this section reviews the objectives of the U. S. health care system and summarizes some of the problems currently preventing their attainment. Section II provides a brief description of how the medical and health insurance markets work. The section emphasizes both conceptual issues that are helpful in interpreting historical data and recent developments in the health care sector that presage significant structural changes: primarily increased competition in both medical care and health insurance markets. Section III describes recent trends and discusses economic issues in health care cost, access, and quality, with greater emphasis on cost and access. Section IV summarizes the extent of the government's role in health care and discusses several areas in which the interaction of government policy and the private market behavior have unintended outcomes. Section V summarizes the main points encompassed in the report.

A. Objectives of the U. S. Health Care System

Three major developments characterize the American health care system over the past four and a half decades. First was the rapid diffusion of private health insurance. Between 1945 and 1960 the number of people with hospital insurance coverage rose from 32 million (23% of the population) to over 122 million (67%). Over 180 million (76%) Americans were covered by such insurance in 1987. Next came the spread of public health insurance through Medicare and Medicaid, both enacted in 1965, a year that marks the beginning of a major governmental role in the provision of health care. The focus of health policy through the 1960s was clearly on access and quality, with predictable and sometimes undesirable effects. The increased availability of health insurance and reliance on third-party cost-based reimbursement methods encouraged high utilization of health services. Meanwhile, the emphasis on quality stimulated the proliferation of new products, services, and technologies that may not always have been justified by cost or need. The consequence

was a swift escalation in health care costs, which, in turn, fueled the third and most recent development. Beginning in the late 1970s, vigorous efforts at cost containment by the private and public sectors brought about a metamorphosis: a radical change in the way hospitals and physicians are reimbursed; deregulation of some parts of the health care sector; and the increasing degree of competition. Increasing competition holds promise of efficiency gains in the health care sector; however, it also has raised concerns over its potential effects, on the quality of care generally and care for the poor in particular.

Health policy in the United States has thus attempted to achieve at least three objectives simultaneously: maintaining *cost control*; securing equal *access* to health care; and assuring a high degree of *quality* in the delivery of health services (through investment of resources and preservation of freedom of choice for buyers and sellers). These tripartite objectives create inherent tensions that may render their simultaneous satisfaction impossible. Relatively less success has occurred in the area of cost control, despite recent extensive efforts in this area. Over the past twenty years, national health care expenditures have nearly doubled as a percentage of GNP, surpassing 11% in 1988. This percentage is higher, and has been rising more rapidly, than in other industrialized countries.

Of course, a high or growing percentage of GNP allocated to the health care sector does not signal a problem if it merely reflects society's preferred allocation of resources: reducing consumption of other goods and services in return for increased health care services. The recent experience with the Medicare Catastrophic Coverage Act of 1988, however, suggests that people may now be less willing to pay higher taxes for expanded health benefits.¹ Indeed, pressure is mounting to reduce Federal expenditures on health care, which now account for about 15% of total Federal outlays, a four-fold increase over 1965. Further,

¹The Act required the elderly to pay a surtax in order to finance a significant expansion in drug benefits as well as an increase in coverage for catastrophic expenses.

there is increasing concern about the impact of higher health insurance costs on the competitive position of firms doing business in this country. Further improvements in access to health care and higher health care quality may require a price that society is unwilling to pay.

B. The Major Health Care Issues

The emerging public policy issues in health care for the 1990s will continue to center on the three objectives described above, with perhaps greater emphasis on cost control and access. This subsection provides a brief description of some of the issues currently preventing attainment of the three objectives; more complete descriptions are contained in subsequent sections of the report. For convenience, the issues are classified under cost containment, access, or quality, though most of the issues could be classified reasonably under more than one objective. For example, long-term care is discussed under access, though financing issues are clearly an important aspect of the overall problem.

1. Cost Containment

National health expenditures grew at an average annual rate of 13% between 1970 and 1982 but then slowed to well under 10% in the mid-1980s. Toward the end of the 1980s, the rate of growth again surpassed 10%. The rate of growth in future health care expenditures is highly uncertain and could be significantly affected by disease patterns such as the incidence of AIDS. Several major attempts at cost containment are too recent to evaluate fully, and new efforts will certainly be undertaken. The movement away from cost-based reimbursement and third-party payment for essentially predictable events is far from

complete. The following well-known problems will influence further attempts at cost control.

- *Employer costs.* For businesses, health-related expenses exceed 6% of total labor compensation, a three-fold increase since 1965. Employers are requiring increased cost sharing by employees and enforcing better quality control through "managed care" programs. Although the private sector has initiated many cost containment efforts, many large employers are calling for further government help in financing growing health care costs. A number of employers are supporting national health insurance.
- *Medicaid.* State governments are concerned by the growing costs of Medicaid and have made extensive use of the recently granted freedom to adopt alternative techniques for hospital reimbursement. Nearly half of Medicaid expenses now go toward nursing home care, an expenditure that is likely to increase in the future as the population ages.
- *Medicare.* The Federal government is concerned about the financial status of the Hospital Insurance (HI) and Supplementary Medical Insurance (SMI) trust funds (described in section III.A.2). The HI program is expected to begin incurring operating deficits in the mid-1990s. The SMI program is the fastest growing component of social security and, at its current growth rate, could become larger than the combined HI and the Old-Age, Survivors, and Disability Insurance programs.
- *Competition vs Regulation.* Past efforts at controlling costs through regulation have not been successful. Most States have laws mandating certain coverages in employer-provided health plans which tend to increase health care costs. Debate will continue over whether public policy should be directed at fostering competition to control costs or imposing additional regulations to both control costs and assure access.
- *Medical Malpractice.* Although the tort system can be an effective quality assurance mechanism, the rising cost of malpractice insurance has prompted calls for tort reform.

2. Access

Equal access to health care for all citizens has long been a goal of the American health care system. Yet, the access gains achieved in the 1960s and 1970s have stalled (or reversed) and policymakers are now focusing on the following issues.

- *The Uninsured.* Approximately 85% of the U. S. population has some form of health insurance coverage. The 15% (about 35 million persons) that lack insurance are primarily nonelderly and a majority are either employed or dependents of employed persons. The problem of lack of health insurance coverage has become more apparent in recent years as the number of uninsured has increased, the price of health care has escalated, and the market for providing health care has changed. The uninsured quandary has led to proposals for Medicare and Medicaid reform, mandated health benefits, enhanced tax incentives, and national health insurance.

- *Long-term care for the elderly.* Long-term care embraces a broad range of services related to custodial, residential and social, as well as medical needs. The demand for such care generally rises with age, though some nonelderly persons also have long-term care needs. Because the U. S. population is aging, it is expected that the demand for long-term care services also will continue to rise.

Most long-term care is currently provided in the home or community. Institutional long-term care has grown dramatically, however. Nursing home expenditures are now about 1% of GNP, supported evenly by private (primarily out-of-pocket) and public (primarily Medicaid) funds. As a higher proportion of the population enters the age group in which nursing home care is often needed, pressure will mount to find alternative ways to finance nursing home care and long-term care generally.

- *Acute catastrophic health care insurance for the elderly.* A number of elderly incur high out-of-pocket expenses for hospital and physician services. Medicare imposes limits on

coverage of these services (see section III.B.3) and 30% of the elderly do not have Medigap policies to fill the gaps, though some have catastrophic coverage through employer and individually purchased plans. The Medicare Catastrophic Coverage Act of 1988 established out-of-pocket limits for Medicare-covered services, but the Act was repealed in 1989 when some elderly protested the manner in which the expanded benefits were financed.

3. Quality

Quality of care relates to the success of treatment outcomes, the best methods for producing medical services, and the level and extent of medical care available. Each involves quantity-quality tradeoffs requiring decisions over how resources should be allocated within the medical sector and how many resources should be devoted to that sector. Difficulties arise in establishing the appropriate criteria and decisionmakers for making these tradeoffs. The criteria used by economists are maximization of consumer satisfaction and utilization of the least costly method of production. This implies that consumers and producers are the appropriate decisionmakers.

Section III describes the history of medical care spending in the United States. The share of GNP going to health care has risen from under 6% in 1965 to over 11% today. A question that often arises in this context, and that bears on the issue of quality is: how much of the increased expenditure is attributable to price inflation and how much is due to more and better medical services? If the latter were predominant and the growth in health care spending reflects nondistorted consumer choices, the view that medical care inflation is rampant may be extreme. Even in this case, however, it is exceedingly difficult to judge the need for more and better services. Research in this area has been severely hampered by measurement problems (e. g., Newhouse, 1988a) and consumers generally have insufficient

information in order to assess quality. Consequently, a firm answer to the above question is currently unknown.

Quality of care issues generally represent a formidable challenge that would benefit immensely from improved data. As described later in this report, the changing nature of the health care market offers the prospect of more and better information that may prove helpful in judging the quality of medical care. An adequate treatment of quality of care issues, however, is beyond the scope of this report.

Quality assurance is another aspect of quality of care. The Federal government attempts to monitor quality through professional peer review organizations and to assure quality through the legal system (antitrust and the tort system). Recent changes in the methods for third-party reimbursement, such as the Prospective Payment System (PPS) in the Medicare program, have substituted a fixed payment determined in advance for the more traditional "retrospective," cost-based system. Such changes have raised concerns that hospitals and physicians may skimp on care. In turn, this has led to calls for additional peer group monitoring.

II. A Brief Description of the Medical Care Sector

The medical care industry provides an "output" or service using several inputs, including hospital services, physician services, nurses, and health professional education. Section II.A provides a brief description of how these input markets interact.² Section II.B characterizes the evolving structure of the medical care market. The health insurance market is discussed in sections II.C and II.D.

²An alternative view of medical care is as an input into the production of health. That view underlies evaluations of health care outcomes. This report emphasizes efficiency issues, which arise from the view of medical care as an output, generated by a medical care production function.

A. How the Medical Care Market Operates

A highly simplified model of the medical market can be represented by three basic submarkets, along with the principal determinants of supply and demand in each: institutional markets that include hospitals, physicians' offices, outpatient clinics, surgicenters, Health Maintenance Organizations (HMOs), home care, etc.; factor markets that include health professionals, capital, and other inputs; and education markets where health professionals are trained.³ The demand in each of the submarkets is derived from the demand from another submarket. The demand for institutional care is derived from the initial demands for medical treatment. The demand for health manpower is likewise derived from the demand for institutional care. Finally, the demand for health professional education is derived from the demand for each health manpower profession. An increase in health insurance lowers marginal out-of-pocket prices to consumers, for example, and will result in a shift in the aggregate demand for medical care which will be transmitted to each of the submarkets. The demand for institutional settings will increase, some more than others, depending upon the demand response of different population groups, what types of medical treatments are demanded, and the importance of price to utilization. Prices and quantities in the institutional settings will increase, causing an increase in the demand for health professionals, which in turn will raise employment and wages in that market. The extent of price and quantity increases in the various markets will, of course, depend upon the size of the initial increase in demand and the elasticity of supply in each market.

The demand for medical care originates with a patient's demand for treatment. The individual's demand will depend upon income (net of fixed medical costs) and (out-of-pocket) price as well as incidence of illness, cultural-demographic factors (e.g., age, sex, race, marital status, family size, and education), and the opportunity cost of time. The future

³Section IIA draws from chapter 3 of Feldstein (1988).

incidence of illness is highly uncertain and causes individuals to seek the risk-pooling advantages offered by health insurance, which reduces the out-of-pocket price of medical care. As out-of-pocket prices decline with an increase in third-party payments, demand becomes more responsive to the cost of time. Thus, changes in the price of medical care through, say, changes in out-of-pocket expenditures will have a greater effect on persons with low time costs.

The dual role of the physician as agent for the patient and as supplier of a medical service is crucial to the demand for medical care. Unlike most other markets, the patient does not decide directly the goods and services to purchase. Rather, the decision is made for the consumer (patient) by a physician (agent) on the basis of the physician's awareness of the patient's medical needs and financial resources. Because the physician is also a supplier of medical services, a potential conflict-of-interest relationship arises. In addition, decisions concerning medical care purchases have become less constrained by financial considerations as comprehensive health insurance has spread. Physicians may prescribe the highest quality (quantity) of medical care for their patients because of malpractice concerns and because even a small marginal benefit associated with additional tests or services might be greater than the net price to the patient. The issue of demand creation by physicians is a highly contentious one, however, that has not been settled empirically (Pauly, 1986).

The dual role of the physician also raises the issue of demand creation by physicians. Unnecessary surgery or superfluous physician office visits are possible undesirable consequences of the conflicting role of the physician. The method of reimbursement can also be important here. Evidence indicates that the rate of surgical procedures is higher

when the physician is reimbursed on a fee-for-service basis as compared to a capitation basis (i.e., a fixed per capita amount regardless of the number of services).⁴

The supply of medical services depends upon the availability and costs of the supplies in each of the other submarkets. The supply and demand of health professional educational institutions determine the number of graduates and tuition rate. The number of new graduates plus the existing stock net of retirements determines the supply of health manpower at any point in time. This potential supply, in conjunction with demand will determine wages and employment in that market. The cost of providing care in any institutional setting will depend in part on the wages prevailing in certain health professions.

B. The Evolving Structure of the Medical Care Market

The conditions in the market for medical care services cause it to deviate significantly from the purely competitive model, as indicated in Table 1. Medical care is characterized by imperfect information and imperfect competition. One possible consequence is inefficient outcomes that may lead to greater health care expenditures. Some of these inefficiencies will be discussed further in subsequent sections.

The structure of the medical care market has changed dramatically in recent years, primarily as a result of private and public sector responses to the rapid increases in health care costs over the past two decades. Though the effects have become manifest only in the 1980s, preconditions for the emergence of a more competitive health care market started in the public sector over twenty-five years ago. Table 2 delineates some key Federal initiatives that presaged a more competitive health care market in the 1980s. Application of antitrust laws to the medical sector, beginning in mid-1970s, also contributed importantly

⁴The issues raised in this and the preceding paragraph are part of the general problem of moral hazard, discussed in more detail in section II.C. For the evidence referred to in this paragraph, see Feldstein, (1988, p. 92).

Table 1
Differences Between the Standard Competitive and Medical Markets

Competitive Markets	Medical Markets
Many sellers	Limited number of hospitals
Profit-maximizing firms	Mostly not-for-profit hospitals
Homogeneous commodities	Heterogeneous services
Well-informed buyers	Ill-informed buyers
Direct payment by consumers	Predominately third-party payment

Source: Stiglitz (1988).

to a more competitive environment by reducing the power of physicians to restrict practice, by enabling advertising, and facilitating competition among HMOs, Preferred Provider Organizations (PPOs), and traditional suppliers (Feldstein, 1988).

Federal initiatives shown in Table 2 were instrumental to the rapid growth in HMOs that occurred over the past decade. Legislation during the 1970s popularized the concept of prepaid health plans and provided financing for further development of HMOs. Legislation in the 1980s facilitated the involvement of the private and public sectors in HMOs and loosened restrictions on their operations. As shown in Figure 1, the percent of the population enrolled in HMOs increased from 4 percent in 1980 to over 12 percent in 1987.

As the events in Table 2 suggest, previous Administrations generally have viewed the growth in HMOs and prepaid health plans as a positive development for a more competitive medical market. Greater use of HMOs by Medicare is being encouraged by the current Administration. Such plans have a clear incentive to minimize the cost of providing medical services to enrollees. The expectation is that, as compared to fee-for-service plans, prepaid plans should enhance efficiency in the delivery of care and result in a more competitive health insurance market. Evaluations of this expectation are incomplete, partly because

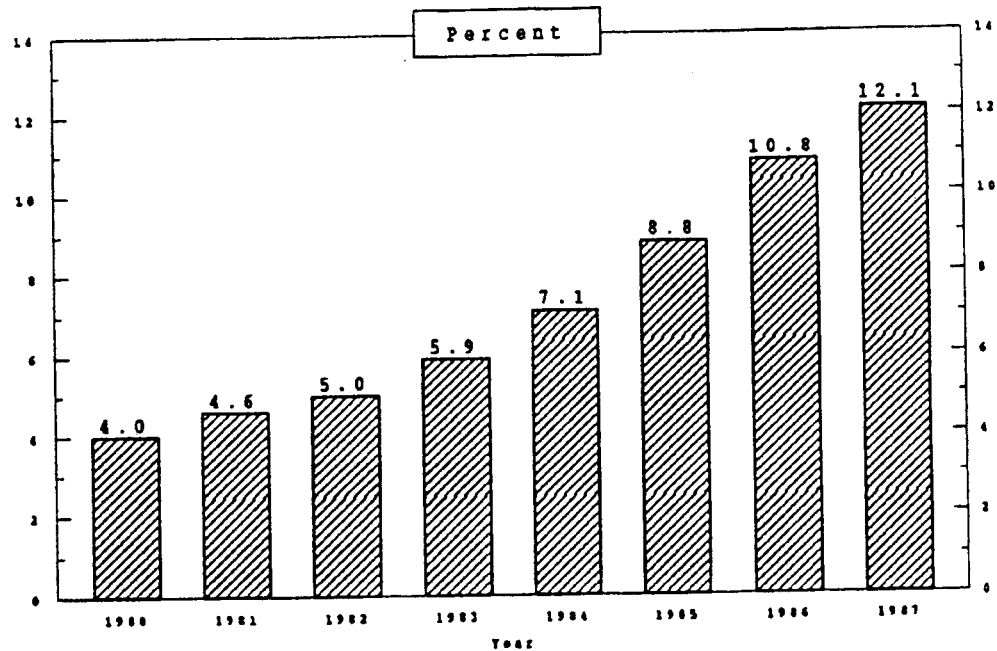
Table 2
Key Federal Initiatives Leading to
Competition in the Health Care Market

Year	Event
1963	Health Professions Educational Assistant Act: aided training of physicians & other health personnel.
1973	Health Maintenance Organization Act: assisted their establishment.
1976	HMO Amendments: relaxed requirements to qualify for federal support.
1981	OBRA: mandated cuts in expenditures for health programs; increased Medicare deductibles; enhanced States' flexibility in Medicaid.
1982	TEFRA: made Medicare secondary payer to private health plans; changed reimbursement under Medicare; provided incentives for HMOs to accept Medicare beneficiaries.
1983	Social Security Amendments: introduced prospective payment system under Medicare.
1984	DEFRA: Medicare physician reimbursement based on physician assignment.
1988	HMO Amendments: greatly enhanced flexibility for HMOs.

most of the growth in HMOs has occurred only recently and partly due to inherent difficulties in comparing prepaid and fee-for-service plans. Reviews of empirical evidence (Pauly, 1986; Feldstein, 1988; and Davis, *et al*, 1990) conclude that HMOs provide similar quality health care at a lower total cost than fee-for-service plans, primarily as a result of lower hospital utilization.⁵ The *growth* in total costs is not significantly lower, however, so

⁵Lower hospital utilization is accomplished through lower admission rates. The reasons for lower admissions are unclear, but may be partly due to favorable selection whereby HMOs attract a higher proportion of lower-risk individuals than fee-for-service plans.

Figure 1
Percentage of the Total Population Enrolled
in HMOs, 1980 to 1987



Source: Davis, et al (1990).

the long-term effect of HMOs is uncertain. This uncertainty may be reduced in the future as new studies take advantage of better data emanating from the rapidly changing structure of the HMO market.

The consequences of Federal initiatives also have become apparent in the areas of physician supply and hospital utilization (Feldstein, 1988). The remainder of this subsection discusses the Federal influence on physician supply; section III describes the effects on utilization of Medicare's new system for reimbursing hospitals. The 1963 Health Professions Educational Assistant Act was intended to remedy what was perceived to be a shortfall in the number of current and future physicians. Until the early 1960s, the physician per 100,000 population ratio was virtually constant at 140 (Figure 2). As a consequence of the Act, new medical schools were built and existing medical schools increased their capacities.

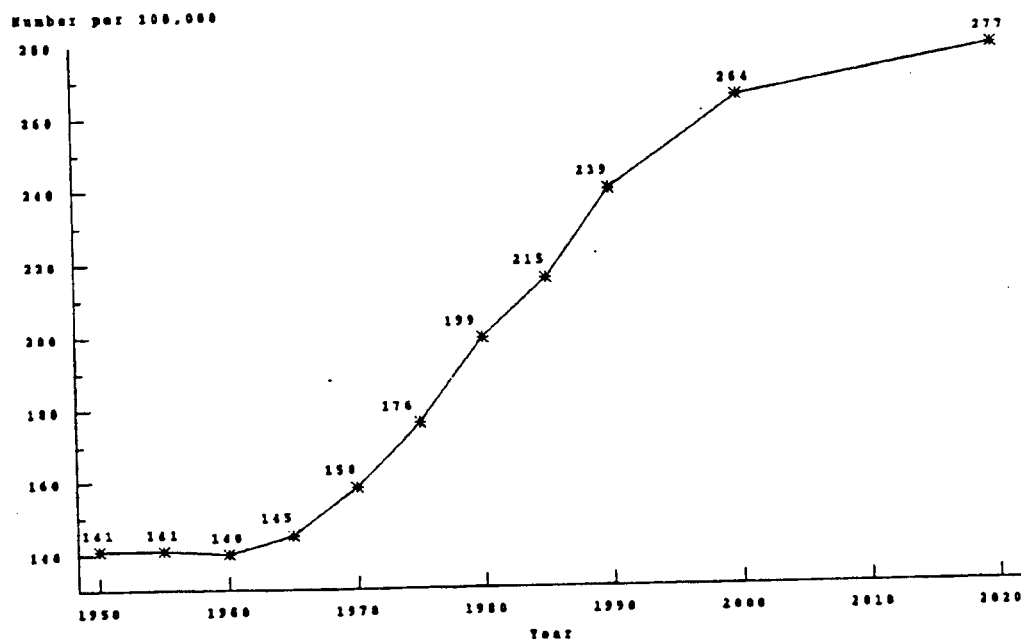
In the early 1980s, the physician-population ratio surpassed 200, a 43% increase in twenty years.⁶ Figure 2 shows that the Department of Health and Human Services expects the ratio to increase substantially over the next ten years.

The growth in physician supply could affect physician income. Table 3 displays data on real median net income (after expenses but before taxes) for all physicians and the principal physician specialties over the period 1977 to 1988 (1980, 1987 excluded). Although the data do not exhibit a continuous trend, they indicate some growth in real income over the period for physicians as a whole. The data in columns three through ten suggest that real income growth is concentrated in certain specialties. Of the eight specialty groups, three (General Practice, Internal Medicine, and Pediatrics) showed a decline in real income over the period. Anesthesiologists and surgeons experienced substantial growth in real income. Any general inferences, however, require further analysis and more information on the supply and demand for physicians (and physicians' assistants, midwives, etc.).

The rising supply of doctors may have assisted the recent growth in HMOs and other prepaid health plans. Organized physicians became more willing to tolerate and to join such organizations in order not to lose market share as the number of competing physicians continued to grow (Pauly, 1985). Further, recent evidence shows that physicians have been working longer hours during the 1980s, and the proportion of physicians that advertise has been rising as well (Emmons, 1987). The long-term impact of a growing physician stock is uncertain: it could either frustrate or reinforce current cost containment efforts. As indicated in section III, expenditures on physicians' services have continued to increase.

⁶The increase is partly due to graduates of foreign medical schools working in the United States.

Figure 2
Historical and Projected Physician to
Population Ratio, 1950 to 2020



Source: U. S. Department of Health and Human Services, 1988; Feldstein, 1988.

Table 3
Median Physician Net Income After Expenses Before Taxes, 1977 to 1988
 (thousands of 1983 dollars)

Year	All	GP	IM	SUR	PED	OB	RAD	PSY	AN
1977	90.8	75.9	94.1	112.2	74.3	107.3	118.8	74.3	102.3
1978	92.0	76.7	89.0	108.9	73.6	104.3	122.7	73.6	107.4
1979	96.4	75.8	93.7	117.1	75.8	111.6	117.1	77.1	117.1
1981	82.5	66.0	79.2	110.0	60.5	105.6	115.5	70.4	115.5
1982	85.0	65.3	77.7	114.0	64.2	110.9	124.4	70.5	124.4
1983	88.4	60.2	83.3	124.5	62.2	104.4	128.5	70.3	137.6
1984	88.5	61.6	86.6	123.2	64.5	105.9	117.4	77.0	139.6
1985	87.4	65.1	83.6	119.9	65.1	111.5	125.5	74.3	123.6
1986	91.2	68.4	86.7	128.6	68.4	115.9	141.4	74.8	135.6
1988	101.4	71.9	92.1	152.2	71.9	126.8	133.6	82.0	152.2

Definitions: All = all physician specialties; GP = General Practice; IM = Internal Medicine; SUR = Surgery; PED = Pediatrics; OB = Obstetrics/Gynecology; RAD = Radiology; PSY = Psychiatry; AN = Anesthesiology.
 Source: American Medical Association, *Socioeconomic Characteristics of Medical Practice*, 1989.

Recent developments with respect to managed care delivery programs (HMOs, PPOs, etc.) mark a significant move away from the traditional fee-for-service arrangement. One consequence has been to place more of the burden of expenditure control on providers rather than consumers. It seems likely that as this type of medical care delivery system grows, the potential for better information on quality improves. Managed care programs generally have greater ability to provide reliable information on treatment outcomes than do individual fee-for-service practitioners. Finally, rising health care costs are making employers more aggressive shoppers for employees, increasing the pressure to make such information available.

In summary, the medical market has changed significantly over the past ten years. Competition has become more intense, in a way that makes some components of medical care more like other frequently-traded commodities (Pauly, 1988c). Because much of the change has occurred quite recently, the consequences have not yet been fully evaluated. Of particular concern is how low-income persons gain access to medical care under a more competitive system. An important question is whether this concern can be addressed through public policy that does not impede the development of a more competitive medical market.

C. How the Health Insurance Market Operates

People purchase health insurance in order to avoid or reduce the risk of incurring losses due to illness. The chief determinants of an individual's decision to buy such insurance are risk aversion, the probability of illness, the magnitude of potential loss, the price of insurance, and income. The price of insurance also is affected by the tax treatment of health insurance, grouping, copayments, deductibles, and loading charges. Based on these factors, we would expect to (and do) observe relatively greater purchases of insurance

coverage for hospital care and surgery, which have comparatively low probabilities of occurrence but high potential losses, i. e., high risk.⁷ The magnitude of potential losses has increased over time as the relative cost of medical care has risen. In addition, the price of private commercial insurance, measured as the ratio of premiums to benefits, has fallen over time (Sindelar, 1988).⁸ Combined with increases in personal income, these factors have induced substantial growth in the demand for health insurance.

Two notable problems arise in the provision of insurance: adverse selection and moral hazard. Adverse selection occurs when insureds have more information than insurers and high-risk individuals are able to purchase insurance at a premium that is based on a lower-risk group. If insurance companies are unable to distinguish between high- and low-risk individuals, the premium will be based on the average risk of the insured group. In this case, good risks are forced to subsidize bad risks and may therefore decline to purchase the insurance. The problem of adverse selection is largely avoided in government insurance programs through mandatory participation. In the health insurance market, the empirical importance of adverse selection has not been established (Pauly, 1986).

A more serious problem is the potential effect insurance can have on behavior, a problem referred to as moral hazard. By lowering the net out-of-pocket price (but not the total price), health insurance induces people to use medical care beyond the point at which the marginal benefit of additional care to them is equal to its true marginal cost. The greater the degree of moral hazard, the lower the socially optimal level of insurance coverage. This is the familiar (quantitative) moral hazard conundrum inherent in all forms of insurance (Pauly, 1968) but a particularly difficult problem for health insurance (see

⁷This assumes risk averse individuals attempting to maximize expected utility.

⁸The price of Blue Cross-Blue Shield insurance has remained fairly stable (Sindelar, 1988). Note that, although the *price* of insurance has declined, insurance *premiums* have continued to rise, as described later in this report. Premiums measure total expenditure and their positive growth reflects increasing insurance coverage.

below). Moral hazard also has a potentially serious qualitative dimension in health insurance. Particularly when insurance covers all or most of the cost of care, patients and providers are induced to consume additional higher quality, more costly services. The consequence of moral hazard is upward pressure on health care expenditures through both quantity and price (Pauly, 1988a).⁹

The essential difficulty for insurance raised by moral hazard is defining a "neutral" event on which to base benefit payments. This problem is apparently more serious for health insurance than other forms of insurance. In the case of life insurance, for example, the event that triggers benefit payments is easily observable (death). For health insurance, the event is illness or the state of a person's health, the extent of which is not easily observed. In practice, the true state of health is proxied by the amount of medical expenditure, over which the insured has some control. So long as the true state of health is unknown, moral hazard will present the difficulty of balancing the risk-spreading advantages of insurance with appropriate incentives to control the problem (Zeckhauser, 1970).

If perfect information were costlessly obtainable, adverse incentives due to moral hazard would not be a problem. In that case, insurers could adjust premiums to reflect the behavior of insureds. Incomplete but factual information also can help. In analyzing the moral hazard problem for insurance generally, Shavell (1979) demonstrated that if insurers have any factual information about the behavior of insureds, that information has value and should be factored into insurance contracts. Thus, insurers have an interest in reducing the information gap between themselves and insureds in order to moderate the problem of

⁹If insurance has no effect on the incentives to consume or provide medical care, it would not contribute to health care expenditure inflation. People will purchase additional coverage until the marginal benefit of expanded coverage equals the marginal cost of purchase. If insurance were sold at its actuarially fair premium, 100% coverage of all medical expenses would be optimal for risk averse people (Arrow, 1963).

moral hazard (Ebrill, 1990). Insureds share this interest, as risk-reducing behavior (e. g., quitting smoking) should lead to lower premiums.

Moral hazard also can be controlled by restructuring marginal incentives through copayments, deductibles, and other financial limits in insurance contracts. Adjusting premiums on the basis of past claims or loss experience of insureds is another alternative. In principle, insurers can eliminate moral hazard by adjusting premiums exactly to reflect each insured's probability of loss (perfect experience rating). In this case, insurance does not interfere with incentives for care. In practice, monitoring individual probabilities of loss is prohibitively expensive (perhaps infeasible in the case of health insurance), so a modified form of experience rating (such as rating at the group level) is often used.

Moral hazard establishes the connection by which tax subsidies for the purchase of health insurance lead to excess demand for medical care. This issue is discussed in more detail in the next section. Finally, the emphasis of the discussion in this section has been moral hazard in the demand for medical care. Yet, moral hazard also leads providers to supply too much care. One reason, described above, is that the spread of insurance encourages providers to deliver higher quality, more expensive services. In addition, the dual role of the physician as the patient's agent and supplier of services raises the unsettled issue, also described earlier, of demand-creation by physicians. Moral hazard also is important in the malpractice insurance market, as discussed in section III.A.3.iv.

D. The Provision of Private Health Insurance

Four broad groups of suppliers of private health insurance can be distinguished: for-profit commercial insurance firms, not-for-profit plans (primarily Blue Cross and Blue Shield), prepaid plans such as Health Maintenance Organizations and other independent plans (PPOs), and self-insured plans. HMOs and PPOs are showing rapid growth, while the

market share of the Blues and commercial insurers has been declining (Pauly, 1986). Self-insured plans also have been growing rapidly in recent years, due in part to state mandates affecting coverages in employer-sponsored health plans (Jensen and Gabel, 1988).

The health insurance market is thought to be largely competitive, though the existence of a nonprofit sector and various tax and regulatory policies impart noncompetitive elements. More than a thousand firms sell health insurance, ranging from nationwide companies to small firms that sell only in local markets (Sindelar, 1988). The market for health insurance is not expanding as rapidly as in the past, so it is becoming more difficult for all insurers to increase enrollments, particularly with the increased competition from newer forms of providers such as PPOs.

Because the Blues are nonprofit plans, they obtain some tax advantages and incur (and possibly avoid) some regulations that commercial plans do not.¹⁰ In addition, the Blue Cross-Blue Shield plans have effectively segmented their markets (through geographic and product line divisions) in a way that limits competition with one another, in contrast to for-profit plans. Further, Blue Cross receives a discount compared with the charges that commercial companies pay to hospitals for the same care. This provides the Blues with a competitive advantage in organizing PPOs.

Preferred provider organizations have been characterized as "...the most dramatic and promising innovation in American health insurance since the early days of the health maintenance organization" (Frech, 1988, p. 353).¹¹ PPOs provide health insurance in a manner that is designed to reduce health care costs through reductions in both quantity and price. They are organized by providers, insurance companies, employers, or other groups and contract with a limited number of providers (hospitals, physicians) to provide medical

¹⁰The Blues lost their Federal tax-exempt status under the Tax Reform Act of 1986.

¹¹The discussion of PPOs in this section draws from Frech (1988) and Davis, *et al* (1990).

care to a particular group of consumers on preferential terms. Providers are generally selected on the basis of price and/or expected utilization and typically are subject to utilization reviews. PPOs differ from HMOs in allowing consumers the choice of using providers outside the PPO, at higher fees, in use of fee-for-service reimbursement, and in not requiring Federal qualification. PPO consumers are promised savings in the form of price or utilization reductions; providers get more business in return.

The advantage of PPOs for medical care competition is their aggressive attempts to obtain care at a lower price. PPOs negotiate discounts with providers and this information becomes available to consumers. Thus a network emerges for purchasers of medical care that improves both the quantity and quality of information. The information network also is attractive to providers. By adopting a low-price strategy, a provider can be listed with a PPO, which improves the information flow to consumers and leads to a larger volume of patients than without the PPO.

PPOs are quite new and reliable data to measure their impact are not yet available. Prior to 1983, only 30 operational PPOs could be identified; by 1986, the number had risen to 384 (Davis, *et al*, 1990). Due to their inherent appeal to employers attempting to control costs, consumers trying to control medical expenditures, and providers struggling to maintain market share, PPOs are likely to expand significantly in the future.

III. Evidence on the Major Health Care Issues

This section summarizes some of the major trends evolving in the United States health care market. A few points about data should be noted. The underlying expenditure data are based on the National Health Accounts (NHA), developed by the Health Care Financing Administration (HCFA), Department of Health and Human Services. The data used in this report have only recently become available and reflect a substantial revision and

rebenchmarking of the NHA. HCFA also regularly makes projections of the NHA over a 10- to 15-year horizon. In the latest set of projections (HCFA, 1987) health care expenditures were projected to reach 15% of GNP by the year 2000. According to HCFA analysts, the next set of projections will look quite different as a consequence of incorporating the new data. For example, health care expenditures may reach only 13% of GNP in the year 2000. In order to avoid misinterpretation, this report focuses on historical NHA data. Some international health expenditures data also are presented, though the report concentrates on trends in the U. S. data. A variety of other data sources also are used in the report, as noted at appropriate points.

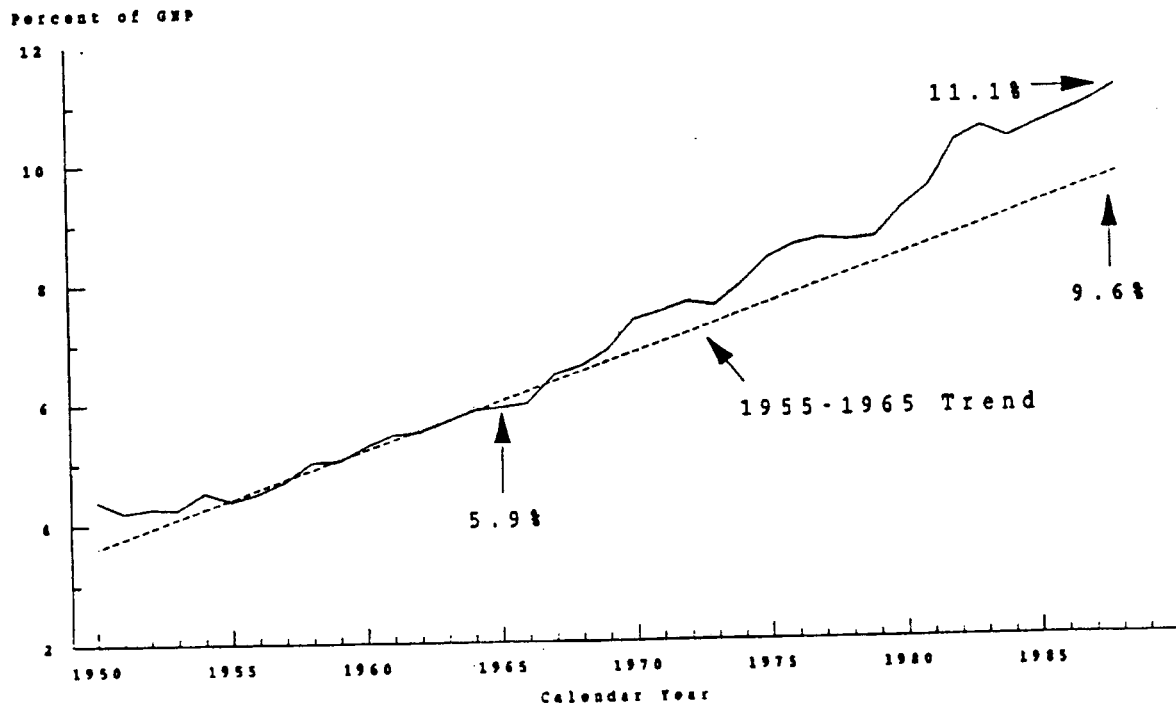
A. Health Care Costs

1. Trends

i. U. S. Health Care Expenditures. U. S. national health expenditures have been absorbing an increasing share of GNP for at least the past 35 years, as seen in Figure 3. Following the enactment of Medicare and Medicaid in 1965, the share began to rise significantly faster, nearly doubling in 23 years. The rising GNP share is expected to continue into the foreseeable future. In 1988, national health care expenditures reached \$540 billion (11% of GNP), 40% of which were public funds and 60% private funds.

National health expenditures are divided into two parts, as seen in the box below: health services and supplies (expenditures related to current health care) and research and construction of medical facilities. The first part consists of personal health care (direct provision of health care), program administration and the net cost of private health insurance, and government public health activities. Personal health care represents by far the largest component of national health expenditures (\$478 billion in 1988) and is typically the focus of concern over the financing of health care. All of the major components of

Figure 3
U. S. National Health Care Expenditures
1950 to 1988

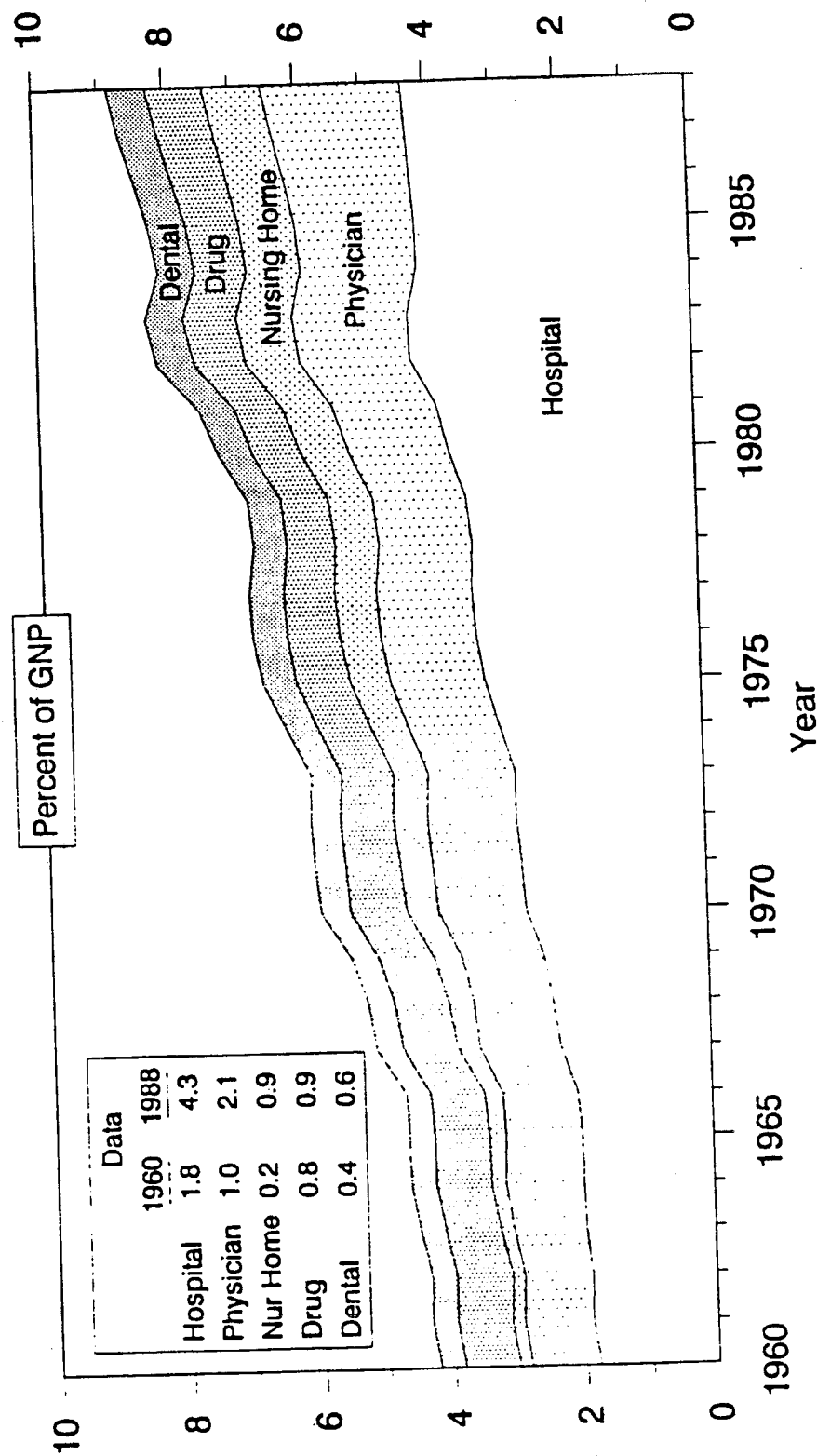


Source: data are from the Health Care Financing Administration; the trend line was estimated by the author.

National health expenditures:
 Health services & supplies
 Personal health care
 Hospital care
 Physicians' services
 Dentists' services
 Other professional services
 Drugs and medical sundries
 Eyeglasses and appliances
 Nursing home care
 Other personal care
 Program administration & net cost of private insurance
 Government health activities
 Research and Construction

personal health care increased between 1960 and 1988, as seen in Figure 4, though expenditures for nursing home care grew more rapidly than any of the other components, quadrupling as a percent of GNP over the 28-year period. Expenditures on hospital and physician services as a percent of GNP more than doubled over the same period. Drug expenditures grew only slightly as a percent of GNP.

Figure 4
Growth in Major Components of Personal Health
Care Expenditures, 1960 to 1988



Sources: Health Care Financing Administration,
Economic Report of the President, 1990, and
Department of Commerce, 1990.

Table 4
Shares of Personal Health Care Expenditures, 1960 to 1988

Medical Service	1960	1965	1970	1975	1980	1988
Hospital	39%	39%	43%	45%	47%	44%
Physician	22	23	21	20	19	22
Nursing Home	4	5	7	8	9	9
Drug	18	16	14	11	9	9
Dental	8	8	7	7	7	6
Other	9	8	8	8	9	10
Total Expenditures in billions	\$23.9	\$35.6	\$64.9	\$116.6	\$218.3	\$478.3

Source: Health Care Financing Administration.

The expenditure growth rates shown in Figure 4 signal changing shares in personal health care expenditures. Table 4 illustrates how the composition of personal health care has changed over time. In 1960, prior to the large-scale involvement of the Federal government in the financing of health care, total personal health care expenditures were \$23.9 billion and expenditures for hospital care were 39% of that amount; hospital expenditures were 77% greater than those for physician services. Fifteen years later, total personal health care expenditures had increased nearly five-fold to \$117 billion, of which hospital costs comprised 45% and physician services only 20%. Hospital care increased steadily as a share of personal health care expenditures until the 1980s, when it started to decline. The opposite pattern occurred for physician services. Taken together, these patterns indicate a shift from inpatient hospital to outpatient physician care, induced partly by the price controls through the Medicare Prospective Payment System imposed on hospital services beginning in 1983 (see section III.A.4). Notice also that the biggest changes in composition occurred during the first ten years after the Medicare and Medicaid programs became effective. The share of nursing home care in personal health care expenditures rose

significantly between 1960 and 1975 but remained constant at 9% thereafter. Drug expenditures declined notably during the first twenty years of the period but didn't change much after 1980.

ii. *International Health Care Expenditures.* What has happened to health care expenditures in other countries? Table 5 shows that the increasing relative importance of the U. S. health care sector is part of a general trend among industrialized nations. With the exception of Portugal, for which pre-1975 data were not available, each country shown in the table allocated a much larger share of Gross Domestic Product (GDP) to health care.¹² For the first 21 countries in Table 5, the share rose from 3.9% in 1960 to 7.5% in 1987, with an average annual growth rate in the share of 2.5%.

A comparison of columns 7 and 8 of Table 5 suggests a significant change in the health expenditure/GDP share. With two exceptions (Greece and Australia), growth in the proportion of GDP devoted to health care slowed significantly between the 1965-75 and 1975-87 time periods. During the earlier period, the share for twelve of the OECD countries was growing faster than in the United States; during the more recent period, the U. S. share grew faster than most other countries.

International comparisons of health care systems suffer from severely inadequate data. Good, comprehensive measures of health care treatment outcomes are unavailable, precluding comparisons of health care quality. Crude outcome measures such as infant mortality rates and life expectancies reflect other socioeconomic factors that may have little

¹²This subsection is based on Schieber and Poullier (1989). Because the international comparisons are based on Gross Domestic Product (the gross market value of goods and services attributable to labor and property located in a given nation), the U. S. percentages will differ slightly from the GNP-based ratios reported in the previous section.

Table 5
Total Health Expenditures as a Percentage of Gross Domestic
Product, 23 OECD Countries, 1960-1987¹
(ranked by 1960-1987 growth rate in expenditure/GDP ratio)

Country	1960	1965	1970	1975	1980	1987	Average Rates of Growth		
							1960-75	1975-87	1960-87
Spain	2.3	2.7	4.1	5.1	5.9	6.0	5.5	1.4	3.6
Japan	2.9	4.3	4.4	5.5	6.4	6.8	4.4	1.8	3.2
Switzerland	3.3	3.8	5.2	7.0	7.3	7.7	5.2	0.8	3.2
Norway	3.3	3.9	5.0	6.7	6.6	7.5	4.8	0.9	3.1
Iceland	3.5	4.2	5.3	5.9	6.4	7.8	3.5	2.4	3.0
Netherlands	3.9	4.4	6.0	7.7	8.2	8.5	4.6	0.8	2.9
United States	5.2	6.0	7.4	8.4	9.2	11.2	3.2	2.4	2.9
Belgium	3.4	3.9	4.0	5.8	6.6	7.2	3.6	1.8	2.8
Italy	3.3	4.0	5.2	5.8	6.8	6.9	3.7	1.5	2.7
France	4.2	5.2	5.8	6.8	7.6	8.6	3.2	2.0	2.7
Sweden	4.7	5.6	7.2	8.0	9.5	9.0	3.6	1.0	2.4
Finland	3.9	4.9	5.7	6.3	6.5	7.4	3.2	1.4	2.4
Ireland	4.0	4.4	5.6	7.7	8.5	7.4	4.5	-0.3	2.3
Austria	4.6	5.0	5.4	7.3	7.9	8.4	3.1	1.2	2.3
Germany	4.7	5.1	5.5	7.8	7.9	8.2	3.4	0.4	2.1
Greece	3.2	3.6	4.0	4.1	4.3	5.3	1.7	2.2	1.9
Denmark	3.6	4.8	6.1	6.5	6.8	6.0	3.9	-0.7	1.9
NZ	4.4	4.5	5.1	6.4	7.2	6.9	2.5	0.6	1.7
UK	3.9	4.1	4.5	5.5	5.8	6.1	2.3	0.9	1.7
Canada	5.5	6.1	7.2	7.3	7.4	8.6	1.9	1.4	1.6
Australia	4.6	4.9	5.0	5.7	6.5	7.1	1.5	1.8	1.6
Portugal				6.4	5.9	6.4		0.0	
Luxembourg			4.1	5.7	6.8	7.5		2.3	
Mean	3.9	4.5	5.4	6.5	7.0	7.5	3.5	1.2	2.5

¹Turkey was omitted since data were available only for 1986 and 1987. Source: Schieber and Poullier (1989).

relation to the quality of health care systems. The wide range of cultural, institutional, and demographic differences further complicates cross country comparisons. Significant efforts are underway to remedy the data deficiency, however, which should enhance international comparisons of health care systems in the future (Schieber and Poullier, 1989).

2. Effects on Public and Private Sector Budgets

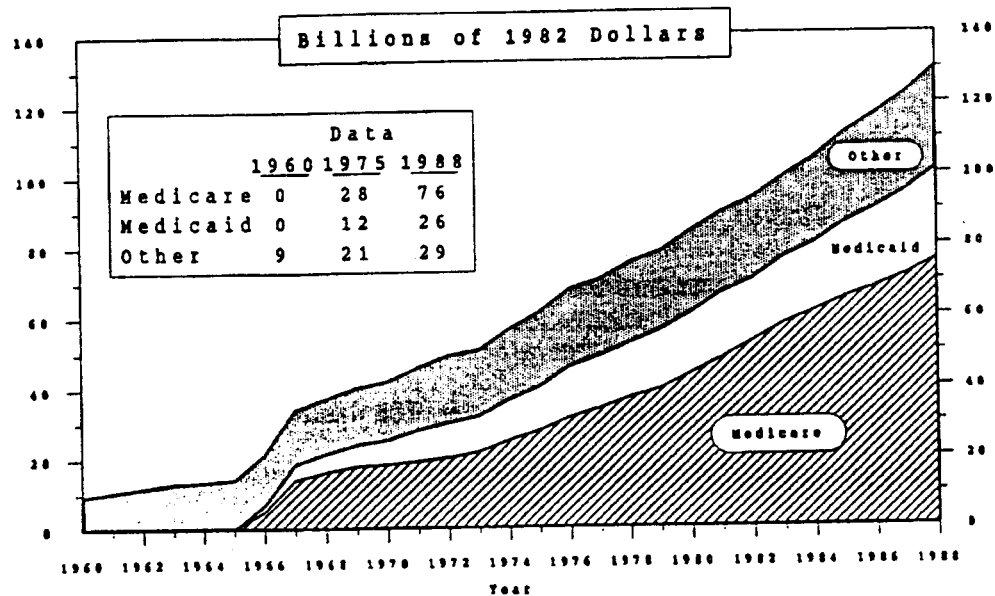
i. U. S. Budgets. The rapid growth in health care costs has affected both public and private sector budgets. Federal expenditures for health care increased dramatically following passage of Medicare and Medicaid, as seen in Figure 5.¹³ Medicare now comprises over 58% of Federal outlays on health care, with Medicaid accounting for another 20%. As Figure 6 shows, the percentage of total Federal outlays accounted for by health care expenditures increased from under 4% in 1960 to nearly 15% in 1988.¹⁴ In view of the relatively large budget deficits in recent years, these figures underscore the reason for the mounting pressure to reduce Federal expenditures on health care.

Medicare has two parts: Hospital Insurance (Part A) and Supplementary Medical Insurance (Part B). The Hospital Insurance (HI) program is financed primarily by payroll taxes and mainly covers inpatient hospital services for the elderly. The Supplementary Medical Insurance (SMI) program is financed by general revenues (75%) and premiums (25%) and pays for physician services, outpatient hospital services, and other medical expenses for the aged and long-term disabled. HCFA predicts that the HI trust fund will begin to incur operating deficits in the mid-1990s and will be exhausted just after the turn

¹³This reflects, in part, a shift in health care expenditures from States to the Federal sector.

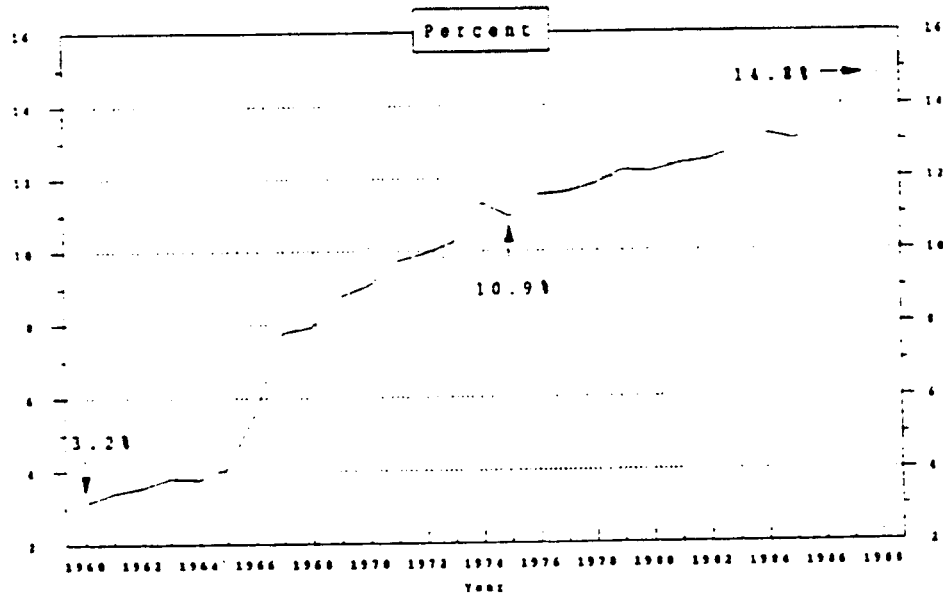
¹⁴Figures 5 and 6 do not include health care-related Federal tax expenditures which are discussed in section III.A.3.

Figure 5
Total Federal Expenditures on Health Care, 1960 to 1988
 (excludes tax expenditures)



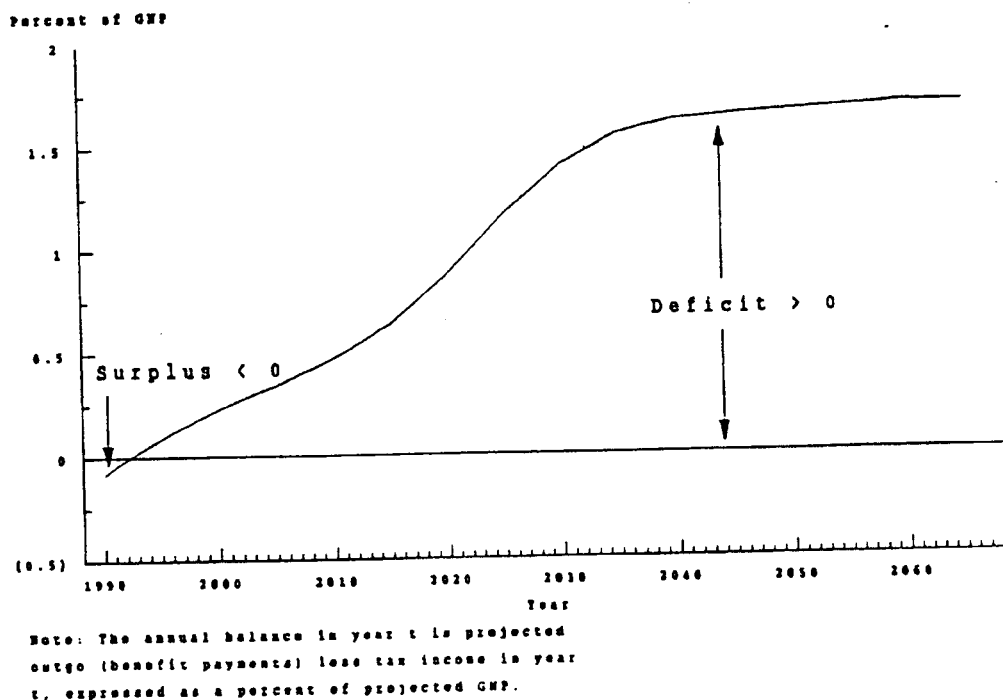
Other is mainly expenditures for VA, Defense, and noncommercial research. Source: HCFA and Economic Report of the President, 1990.

Figure 6
Federal Expenditures on Health Care as a Percent of Total Federal Outlays, 1960 to 1988
 (excludes tax expenditures)



Source: Health Care Financing Administration and Economic Report of the President, 1990.

Figure 7
Projected Operating Balances in the Hospital Insurance
Trust Fund as a Percent of GNP, 1990 to 2065



of the century (U. S. Congress, 1988b). Figure 7 shows the projected path (under intermediate economic and demographic assumptions) of HI operating balances for the next seventy-five years, expressed as a percent of GNP. Following a few years of surpluses, deficits begin and eventually rise to over 1.6% of GNP. The deficits arise from increasing medical costs as well as demographic changes that lead to a rapidly aging U. S. population. An aging population means a higher proportion of persons that are relatively heavy users of health care services and a reduction in the proportion of persons that support health care benefits for the elderly (i. e., a reduction in the worker/beneficiary ratio). This will affect the share of resources devoted to health care for the elderly. The demographic changes are a result of an expected permanent reduction in fertility rates and, therefore, are largely exogenous to future health care policy.

Between 1983 and 1988, the SMI program grew 32% faster than the economy as a whole. Program outlays nearly doubled over that period to \$35 billion. Premiums also doubled over the five year period to \$8.7 billion and government contributions rose from \$14 billion in 1983 to \$25 billion in 1988.¹⁵

Figure 8 charts the historical pattern of the two main sources of revenue for the SMI program: premiums paid by enrollees and contributions from the Federal government.¹⁶ Originally (1965), monthly premiums financed 50 percent of outlays. In 1972, percentage increases in premiums were limited to increases in social security cash benefits. By the early 1980s, the proportion financed by premiums had fallen to about 25 percent and in 1983 Congress established that figure as a floor for the amount of SMI outlays that would be underwritten by premiums.

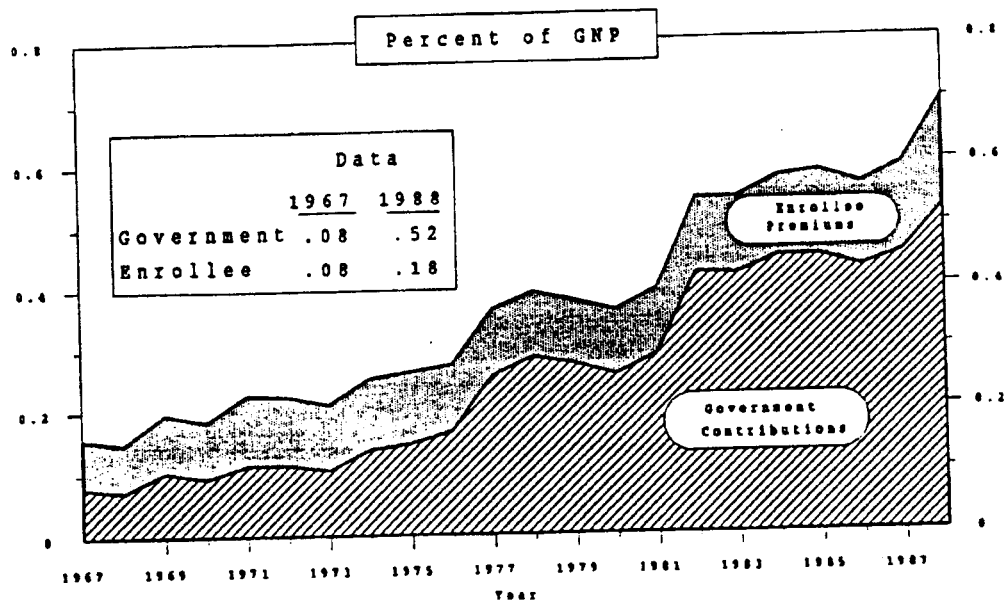
Outlays from the SMI program increased at a 16 percent average annual rate during the 1980s.¹⁷ As the population ages and medical costs continue to rise, the growth rate in SMI outlays should remain high. These growing health care obligations can be viewed as unfunded liabilities in the same way as social security cash benefits (OASDI). For the latter program, income is currently greater than outgo as a consequence of the 1977 and 1983 Social Security Amendments, but OASDI will begin to incur operating deficits within thirty years. The current surpluses will contribute to meeting future social security benefit obligations if they make a net addition to national saving. Alternative proposals have been offered which would require that projected OASDI surpluses be used to reduce Federal debt

¹⁵The data are from *The 1989 Annual Report of the Board of Trustees of the Federal Supplementary Medical Insurance Trust Fund*.

¹⁶SMI is regarded as a yearly renewable term insurance program and the actuarial status is evaluated annually. Projections of the financial status of the program extend out only two years.

¹⁷If the SMI program continued to increase at the average rate for the 1980s, it could become larger than the OASDI and HI programs combined not long after the turn of the century.

Figure 8
SMI Revenues From Enrollee Premiums and
Government Contributions, 1967 to 1988

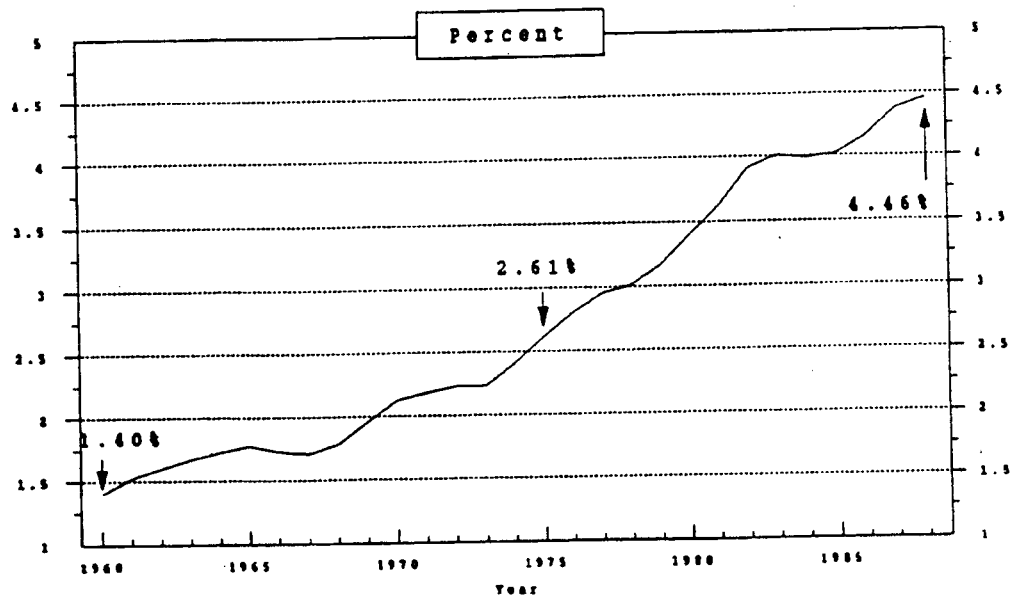


Source: 1989 Annual Report of the Board of Trustees of the Federal Supplementary Medical Insurance Trust Fund.

held by the public and thereby to increase saving and investment, in this way expanding the nation's capacity to pay future benefits. In contrast, the SMI program currently has no advance funding that would help provide for future health benefits under the SMI program.

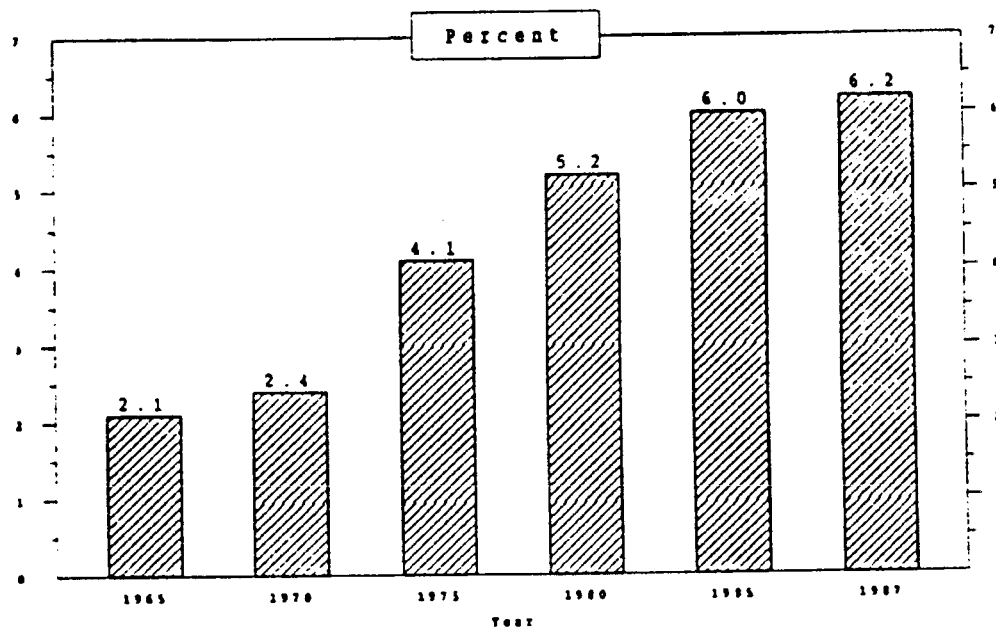
Individuals and business also have experienced the pressure of rising health care costs. One representation of increased expenditures by individuals is displayed in Figure 9. Health insurance premiums as a percent of disposable personal income have increased three-fold since 1960. Though the largest portion of these premiums are paid directly by employers, out of pre-tax income, this cost will be shifted to workers and ultimately come out of disposable income.

Figure 9
Private Health Insurance Premiums as
a Percent of Disposable Income, 1960 to 1988



Sources: Health Care Financing Administration;
 Economic Report of the President, 1990; and
 Department of Commerce, 1990.

Figure 10
Business Expenditures on Health Services as
a Percent of Total Compensation, 1965 to 1987



Sources: the data for this figure are from Levit,
 S., M. Froeland, and D. Waldo (1988).

The growing concern over employer costs of health care inflation is reflected in Figure 10. Business health-related spending as a percent of total compensation nearly tripled during the period 1965 to 1987.

ii. International Budgets. Table 6 shows, for 23 OECD countries, the percentage of total health care expenditures that are reported as public outlays. Though many countries already had a high percentage in 1960, a further significant increase in the public share took place for most countries over the subsequent 15-year period. For the first 21 countries displayed in Table 6, the public share rose from 63% to 77% between 1960 and 1975, resulting in an annual average growth rate in the share of 2.4%. Beginning around 1975, however, the public share stabilized in most countries, or even declined slightly.

The data in Tables 5 and 6 suggest some common experiences in the behavior of health care expenditures in the OECD countries. The health care systems are quite different, however, and specific comparisons are extremely difficult to make, particularly without good information on treatment outcomes. For example, the data in the table do not distinguish public provision and public financing of health care, nor do they account for tax expenditures for health care. Nevertheless, the table makes clear that the public share of health care expenditures is considerably higher in other OECD countries than in the U. S.

3. Contributing Factors

i. Medical Prices and Real Factors: U. S. and International Comparisons. Health care expenditure changes can be decomposed into four price and nonprice factors: economy-wide price changes, net medical care price changes (in addition to general price changes), population, and utilization. Table 7 illustrates the decomposition of nominal level changes in personal health care expenditures for select years. For example, in 1988 personal health

Table 6
Public Health Expenditures as a Percentage of Total Health
Expenditures, 23 OECD Countries, 1960-1987¹
 (ranked by 1960-1987 growth rate in expenditure share)

Country	1960	1965	1970	1975	1980	1987	Average Rates of Growth		
							1960-75	1975-87	1960-87
Netherlands	33.3	68.7	84.3	76.5	75.8	73.9	8.7	-0.3	3.0
Canada	42.7	52.1	70.2	76.0	74.9	73.9	5.9	-0.2	2.1
US	24.7	26.2	37.0	42.5	42.4	41.4	5.6	-0.2	1.9
Finland	54.1	66.0	73.8	78.6	79.0	78.6	3.8	0.0	1.4
Spain	52.1	52.6	54.7	70.4	73.5	71.5	3.1	0.1	1.2
Australia	52.6	57.2	52.6	63.9	61.7	70.5	2.0	0.8	1.1
Iceland	66.7	77.8	82.6	87.3	88.8	88.6	2.7	0.1	1.1
France	57.8	68.1	74.7	77.2	78.8	74.8	2.9	-0.3	1.0
Greece	58.6	62.5	53.4	60.2	82.2	75.3	0.3	1.9	0.9
Norway	77.8	80.9	91.6	96.2	98.4	97.6	2.2	0.1	0.8
Sweden	72.6	79.5	86.0	90.2	92.1	90.8	2.2	0.1	0.8
Belgium	61.6	75.3	87.0	79.6	81.5	76.9	2.6	-0.3	0.8
Japan	60.4	61.4	69.8	72.0	70.8	73.0	1.8	0.1	0.7
Germany	67.5	70.9	74.2	80.2	79.4	78.4	1.7	-0.2	0.6
Ireland	76.0	76.2	77.8	82.5	92.0	87.0	0.8	0.4	0.5
Switzerland	61.3	60.8	63.9	68.9	67.5	68.0	1.2	-0.1	0.4
NZ	80.6	83.8	80.3	83.9	83.6	82.5	0.4	-0.1	0.1
UK	85.3	85.8	87.0	91.1	89.6	86.4	0.7	-0.4	0.0
Austria	66.7	66.5	63.0	69.6	68.8	67.1	0.4	-0.3	0.0
Denmark	88.7	85.9	86.3	91.9	85.2	85.5	0.4	-0.6	-0.1
Italy	83.1	87.8	86.4	86.1	83.7	79.2	0.3	-0.7	-0.2
Luxembourg				91.8	92.8	91.6		0.0	
Portugal				58.9	72.4	60.7		0.2	
Mean	63.1	68.9	73.2	77.2	78.9	77.8	2.4	0.0	0.9

¹Turkey is excluded. Source: Schieber and Poullier (1989).

Table 7
Factors Accounting for Changes in Personal
Health Care Expenditures, 1961 to 1988
(billions of dollars)

	1961	1975	1988
Change in Personal Health Care Expenditures	\$1.5	\$15.0	\$43.6
Accounted for by:			
Economy-wide Inflation	0.2	8.5	18.9
Medical Inflation	0.2	2.3	10.5
Population	0.4	0.9	4.2
Utilization	0.7	3.3	10.0

Source: Health Care Financing Administration, unpublished data.

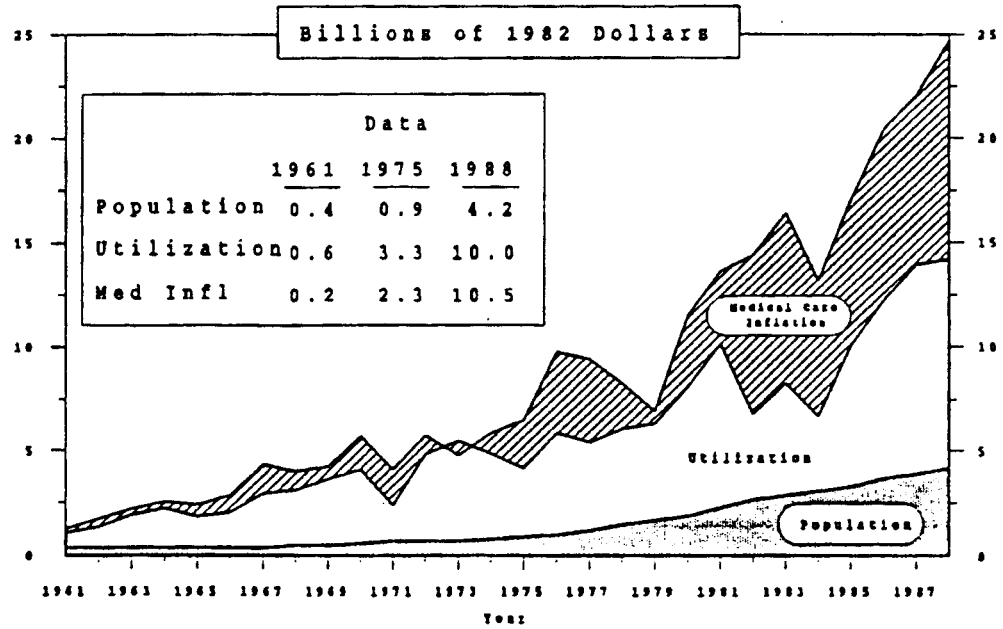
care expenditures increased \$43.6 billion over the preceding year. Of that amount, \$18.9 billion was due to economy-wide inflation, \$10.5 billion to net medical care inflation, \$4.2 billion to population growth, and \$10.0 billion to increased utilization.¹⁸

Figure 11 shows changes in personal health care expenditures with the economy-wide inflation factor removed. The figure thus emphasizes the contribution to expenditure change of relative price change and real factors (population and utilization). Clearly, relative price change has been an important factor in expenditure growth. With the exception of 1973, when price controls were extended for the medical sector, medical inflation made a net contribution to the growth in nominal health expenditures above general price inflation.¹⁹

¹⁸Utilization is a catch-all term for changes in real quantity per capita. A more detailed analysis of changes in medical expenditures would examine additional factors, including changes in consumer demand in response to real income growth and relative price changes, as well as changes in the types of medical services produced and the changing age distribution of the population.

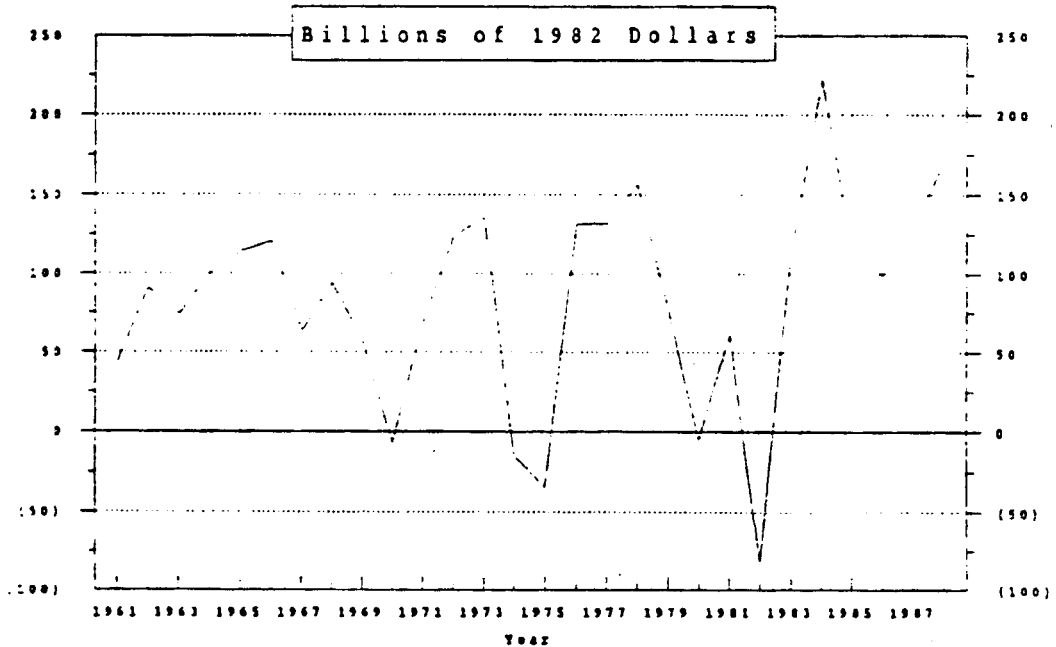
¹⁹Some caution must be exercised here as the inaccurate measurement of quality change may be more serious in medical prices than in overall prices (Newhouse, 1988a).

Figure 11
General Price-Deflated Changes in
Personal Health Care Expenditures, 1961 to 1988



Source: Health Care Financing Administration and
 Economic Report of the President, 1990.

Figure 12
Real Changes in GNP, 1961 to 1988



Source: Economic Report of the President, 1990
 and Department of Commerce, 1990.

Further, real expenditure change (population and utilization) has generally widened over the 28-year period, whereas real changes in GNP, charted in Figure 12, have not exhibited a corresponding pattern. The result is a growing health expenditure-GNP gap. This indicates a growing burden attributable to health care and illustrates why reducing that burden has become a national goal. Fuchs (1985) has argued that during the 1950s and 1960s, when GNP was growing faster than in the 1980s, people were willing to devote a larger portion of real income to medical care. In the 1970s and 1980s, however, with the continuing rapid growth in medical expenditures and relatively slower and more erratic growth in GNP, people were unwilling to actually reduce their consumption of other goods and services in order to finance medical care. Figures 11 and 12 illustrate the forces underlying Fuchs' argument.

Table 8 has a similar decomposition of the rate of change in total health expenditures for six OECD countries over the period 1975 to 1987. The data reveal that relative price change has also been an important factor in health care expenditure growth in other countries. The most important factor across the six countries is utilization, which is affected by technology, the changing age distribution of the population, and changes in the types of medical services produced. Technology and types of medical services are exceedingly difficult to compare across health care systems.

Finally, Tables 7 and 8 and Figure 11 suggest that the population factor per se has been relatively unimportant in health care expenditure growth over the historical period. Nevertheless, expected demographic changes (reflected in Figure 11 as utilization changes) will be quite important to the future growth in health care expenditures. The proportion of the population in the oldest age group (85+), intense users of health care services, is expected to increase substantially over the next 20 years for many of the OECD countries.

Table 8
Factors Accounting for Changes in Health Expenditures
in Six OECD Countries, 1975-1987¹
 (percentage change)

Country	Health Expenditures	Economy-wide Inflation	Medical Inflation	Population	Utilization
France	13.4	8.8	-1.1	0.5	4.9
UK	13.0	9.7	1.0	0.1	1.9
Canada	11.8	6.5	2.0	1.0	1.9
US	11.7	5.8	2.2	1.0	2.3
Japan	9.1	2.9	1.2	0.8	4.0
Germany	6.2	3.4	0.4	-0.1	2.3
Mean	10.9	6.2	1.0	0.6	2.9

¹The difference between the growth in total health expenditure and the sum of the component growth rates is due to the percentage change approximation. Source: Schieber and Poullier (1989).

ii. Growth in Third-Party Payers. A prominent explanation of the rapid increase in health care costs is the spread of private and public health insurance. A corollary is that government tax policy, by subsidizing the purchase of health insurance, is a leading culprit in the "health care crisis" (e. g., Feldstein, 1977). These propositions are discussed in this and the next subsections.

Private health insurance expanded rapidly in the 1950s and public insurance rose rapidly following the enactment of Medicare and Medicaid. In 1960, public funds accounted for 21.4% of total spending on personal health care; fifteen years later the percentage had risen to 38.9%, and increased very little since (Figure 13 and Table 9). Table 9 also shows that Medicare has comprised a growing proportion of the public funds expended on personal

Figure 13
Sources of Personal Health Care Expenditures:
Private vs Public Funds, 1960 to 1988

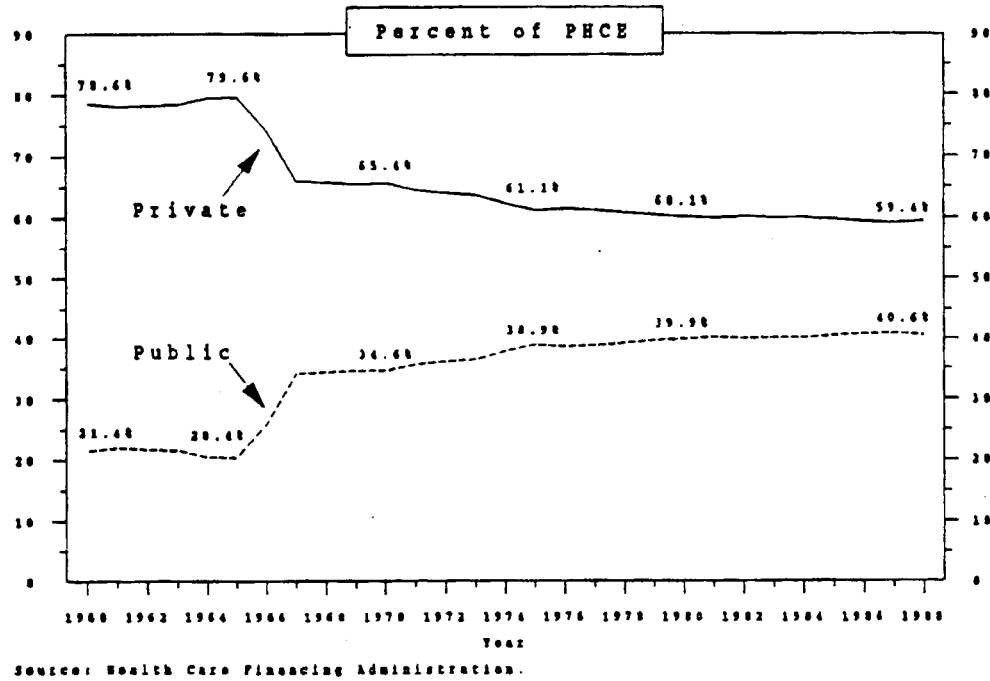


Table 9
Percentage Distribution by Source of Personal
Health Care Expenditures, 1960 to 1988
 (percent)

Source	1960	1965	1970	1975	1980	1988
Private	78.6	79.6	65.4	61.1	60.1	59.4
Direct	55.9	53.4	39.4	33.1	26.7	23.7
Insurance	21.0	24.3	23.4	25.6	29.9	32.4
Other Private	1.7	1.9	2.6	2.4	3.5	3.3
Public	21.4	20.4	34.6	38.9	39.9	40.6
Medicare	0	0	11.8	14.1	17.2	19.2

Source: Health Care Financing Administration, unpublished data. Other Private consists of nonpatient revenues, including philanthropy.

health care, due in large part to reimbursement for personal hospital expenses. Total government expenditures on personal health care were \$5.1 billion in 1960 and \$194 billion in 1988.²⁰ Of the \$194 billion, 59.3% were hospital expenses.

The share of private health insurance funds in personal health care expenditures rose steadily from 21.0% in 1960 to 32.4% in 1988 (Table 9). Growth in the share of both private and public insurance funds has resulted in a steady decline in the share of direct out-of-pocket payments for personal health care. In 1960, 55.9% of such expenditures were financed by direct consumer payments; that percent dropped to 23.7% by 1988.

Both public and private funds are concentrated in hospital care and physician services.²¹ The data in Table 10 show the proportion of personal health care expenditures, by type, supported by total private funds (PVT) and by private out-of-pocket payments (OPKT). The difference between PVT and OPKT is primarily (though not exclusively) the proportion of expenditures supported by private insurance funds.²² The data in Table 10 are quite revealing. For example, in 1960, 20.7% of hospital care expenditures were accounted for by direct payments, with the remainder paid for by either the government (42.5%) or by private funds (36.8%). By 1988, OPKT for hospital care had declined to 5.3%, the government's share had risen to 54.4%, and the private share rose to 40.3%.²³ Also note that the largest drop in OPKT for hospital services occurred in the two-year period between 1965 and 1967. For physician services, the share of out-of-pocket payments

²⁰The government amounts are computed from Table 10 below: $\$5.1 = ((100 - 78.6)/100) \times (\$23.9)$ and $\$194 = ((100 - 59.4)/100) \times (\$478.3)$.

²¹This is expected as hospital care and physician services have relatively small probabilities of occurrence but potentially large costs. See the discussion in section II.

²²In 1988, almost 11% of private funds for hospital care came from nonpatient revenues and philanthropy.

²³The out-of-pocket share for hospital services is substantially lower in the new, rebenchmarked NHA data than in the older pre-benchmarked data which showed an out-of-pocket share of 9.5% in 1987.

Table 10
Personal Health Care Expenditures, Percent Supported by Private Funds,
and Percent Supported by Out-of-Pocket Payments, by Type of Expenditure, 1960 to 1988
(billions of dollars and percent)

Year	PHCIE			Hospital			Physician			Dental			Drug			Nursing Home		
	EXP (\$)	PVT (%)	OPKT (%)	EXP (\$)	PVT (%)	OPKT (%)	EXP (\$)	PVT (%)	OPKT (%)	EXP (\$)	PVT (%)	OPKT (%)	EXP (\$)	PVT (%)	OPKT (%)	EXP (\$)	PVT (%)	OPKT (%)
1960	23.9	78.6	55.9	9.3	57.5	20.7	5.3	93.0	62.7	2.0	99.0	97.1	4.2	98.3	97.5	1.0	86.3	80.0
1961	25.3	78.1	53.9	10.1	57.7	19.2	5.5	92.5	59.9	2.1	98.9	97.1	4.4	98.1	97.2	1.0	81.5	75.1
1962	27.3	78.3	53.4	10.8	58.6	18.4	5.9	92.3	58.5	2.2	98.9	97.1	4.9	98.0	97.1	1.1	74.2	67.8
1963	29.8	78.4	53.3	11.9	59.5	18.9	6.7	92.8	60.3	2.3	98.8	97.1	5.1	97.8	96.9	1.2	73.0	66.6
1964	32.8	79.5	53.9	12.9	61.8	19.8	7.7	93.3	61.7	2.6	98.8	97.1	5.4	97.6	96.4	1.4	71.5	65.1
1965	35.6	79.6	53.4	14.0	62.4	19.6	8.2	93.2	60.6	2.8	98.7	96.8	5.9	97.6	95.7	1.7	70.5	64.6
1966	39.4	74.1	49.1	15.8	54.6	14.9	8.8	87.7	55.7	3.0	97.8	95.5	6.3	96.7	94.6	2.1	64.1	58.5
1967	44.7	65.8	42.3	18.4	45.6	10.1	9.9	77.0	46.7	3.4	95.5	92.5	6.8	95.9	92.6	2.7	47.7	42.2
1968	50.5	65.6	41.9	21.2	45.8	10.4	10.8	77.0	45.6	3.7	93.8	90.7	7.5	95.9	92.9	3.4	53.2	48.0
1969	57.1	65.4	40.5	24.1	45.8	9.2	12.1	77.1	43.9	4.2	95.1	90.8	8.1	95.2	91.7	4.1	54.4	49.3
1970	64.9	65.4	39.5	27.9	46.6	9.0	13.6	78.1	42.8	4.7	95.4	90.8	8.8	94.5	90.7	4.9	53.4	48.2
1972	79.4	63.9	37.5	34.8	46.3	8.8	16.4	75.8	40.5	5.5	94.7	89.4	10.0	93.5	89.1	6.4	52.8	47.5
1974	101.6	62.2	35.0	45.4	45.6	9.0	20.5	73.0	34.7	7.2	94.6	86.9	11.9	92.9	87.4	8.5	49.9	44.3
1976	132.8	61.4	32.0	60.6	46.0	7.5	26.2	72.3	32.4	9.4	94.7	74.7	14.2	92.2	84.8	11.3	50.5	45.0
1978	167.2	60.8	29.8	77.0	46.2	6.5	32.4	71.1	30.1	11.7	95.7	74.7	16.6	92.3	83.0	15.1	47.8	43.1
1980	218.3	60.1	26.8	102.4	46.7	5.2	41.9	69.8	26.9	14.4	95.6	65.2	20.1	91.8	79.4	20.0	47.3	43.3
1982	284.1	60.0	25.3	135.9	47.2	5.1	53.8	68.7	25.1	18.4	96.7	58.4	24.5	92.0	77.3	26.1	49.3	45.6
1984	338.6	59.9	25.1	157.2	46.0	5.1	67.1	68.6	23.3	21.4	97.3	57.6	29.8	91.5	75.7	31.2	51.1	47.9
1986	397.7	59.2	24.3	179.2	45.1	4.8	82.1	66.7	19.9	24.7	97.3	57.2	35.6	89.8	72.9	36.7	51.9	49.0
1988	478.3	59.4	23.7	211.8	45.6	5.3	105.1	66.6	18.9	29.4	97.5	55.4	41.9	89.1	70.7	43.1	51.4	48.4

Definitions: PHCIE = personal health care expenditures; EXP = expenditures in billions; PVT = percent of EXP supported by private funds which consist mainly of OPKT plus private insurance; OPKT = percent of EXP supported by direct out-of-pocket payments. Other personal care is not included in the table.

Note: 100 - PVT = percent of EXP supported by public funds; PVT - OPKT = (primarily - see text) the percent of EXP supported by private insurance; 100 - OPKT = percent of EXP supported by third-party payers. Source: Health Care Financing Administration

also declined significantly from 63% in 1960 to 19% in 1988, with a third of the decline occurring between 1965 and 1967.

How has the spread of health insurance contributed to rising health care expenditures? The crucial issue in the health insurance - health care cost nexus is the extent to which incentives are altered by health insurance; that is, the extent of moral hazard, discussed in section II. This depends, in part, upon the net price elasticity of demand for medical care; the greater the elasticity, the greater the price distortion caused by insurance. Empirical research on this topic is still evolving. Manning, *et al* (1987), using experimental data, estimate a relatively small price (and income) elasticity and conclude that the price-distorting effect of health insurance can account for only a modest portion of the sustained postwar rise in health care expenditure. This contrasts with earlier work by Feldstein (1971, 1973, 1977) and Feldstein and Friedman (1977), which concluded that the spread of health insurance was a major cause of rising health care costs. The earlier work also emphasized the effect on health care costs of qualitative moral hazard. That is, the excess demand for medical services caused by health insurance resulted in a situation in which it was rational for providers to deliver higher quality, more expensive services (the technological imperative). This component of the health insurance - health care cost connection gets some support in a recent analysis of time series data (Newhouse, 1988b).

On balance, health insurance, through moral hazard, encourages overconsumption of medical services and thereby imparts upward pressure on health care expenditures. Much uncertainty surrounds the magnitude of this effect, however, particularly regarding the insurance effect on the *provision* of care. Recent evidence indicates that the insurance effect on the *demand* for care is modest. The challenge is to find mechanisms to control moral hazard.

iii. *Tax Subsidies.* The purchase of private health insurance is given preferential treatment in the U. S. tax system. The most important provision is the exclusion of the value of employer-purchased health insurance from an employee's income, for both income and social security tax purposes.²⁴ An employee may receive increased income from their employer in the form of wages or in the form of health insurance (or another fringe benefit). In either case, the cost to the employer will be the same (employers' payments for health care benefits are a tax deductible expense) if it is assumed that employees bear the full burden of payroll taxes.²⁵ However, so long as they pay taxes on their wage income but not on the value of employer-purchased health insurance, employees have an incentive to receive income in the form of fringe benefits. Thus, the tax system provides an incentive to receive compensation in the form of employer-purchased health insurance benefits. The effect of this provision is to lower the net price to the employee and to increase the aggregate demand for health insurance. This subsidy to health insurance premiums creates a prior link in the health insurance - health care cost nexus described above.

The effects of tax policy toward health insurance have been studied extensively, beginning with a series of papers by Feldstein in the 1970s. The results of that research are summarized by Pauly (1982, p. 631): "...it is not too much of an exaggeration to read Feldstein's diagnosis of the cost-inflation crisis in the hospital sector as related to a single cause: the tax treatment of health insurance." Recently, Chernick *et al* (1987) conducted a microsimulation analysis of the tax subsidy - health care expenditure linkage using recent estimates of demand elasticities. They concluded that "...complete elimination of the favorable tax treatment of employer contributions to health insurance might reduce

²⁴A thorough discussion of the tax rules affecting private health insurance is contained in U. S. Department of Treasury (1990).

²⁵If employers bear part of the burden of payroll taxes, then payments for health benefits would have a cost advantage over wage payments.

employer-sponsored health insurance demand by about 27 percent and reduce aggregate medical services demand by about 5 percent." (Chernick *et al*, 1987, p. 23). This result indicates a smaller tax subsidy - health care cost effect than Feldstein's, but one that is nevertheless substantial.

The tax subsidy makes the price of health insurance lower than without the subsidy, thereby contributing to health care expenditure inflation. Further, the value of the subsidy rises with income tax brackets (Pauly, 1986) and most persons who receive employer-provided health insurance are in the middle to upper income brackets (U. S. Department of Treasury, 1990). Consequently, most of the subsidy goes to nonpoor people.²⁶ One of several options offered for further consideration in a recent Treasury report (U. S. Department of Treasury, 1990) was a cap on the exclusion for employer-provided health insurance. A cap potentially would eliminate the "first dollar" nature of the exclusion and permit a retargeting of the subsidy.

iv. Medical Malpractice. Asymmetric information in the patient-insurance company relationship is a crucial aspect of the discussion in the preceding section. Similarly, the patient-physician relationship is associated with information asymmetries.²⁷ Monitoring the quality of services rendered is costly, so patients will generally be relatively uninformed purchasers of medical care. The result is that patients demand a mechanism for settling unsatisfactory treatment outcomes. Patients rely on the legal system to decide appropriate settlements, and medical care providers rely on malpractice insurance to avoid the financial risk of incurring a large settlement.

²⁶The exclusion can result in substantial revenue loss: \$37 billion in income tax revenue and \$19 billion in social security tax revenue for fiscal year 1990 (U. S. Department of Treasury, 1990, p. 61).

²⁷The dual role of the physician as agent for the patient and supplier of medical services was described in section II.

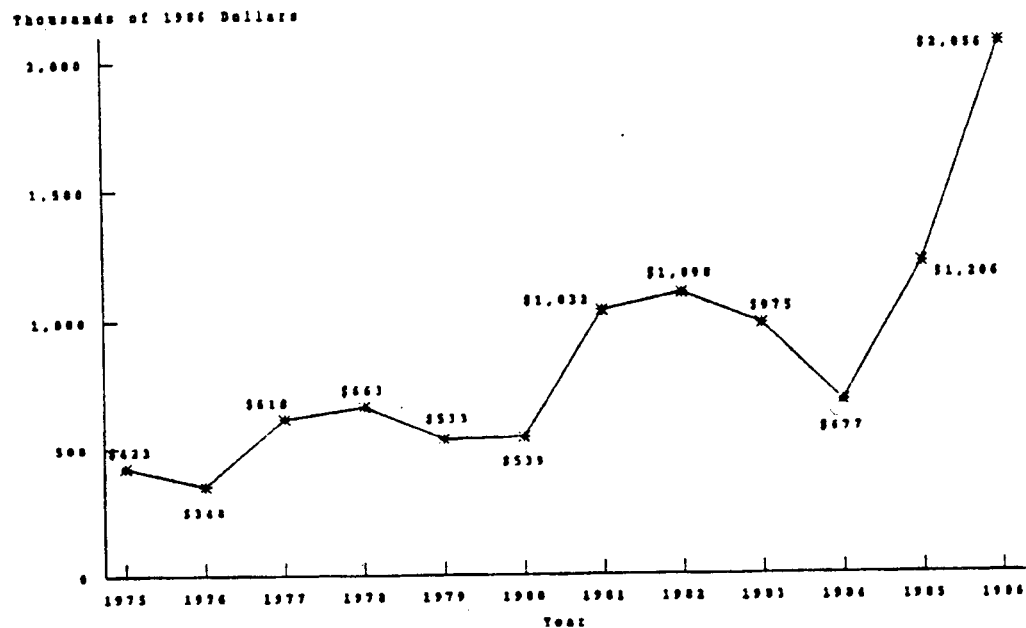
Medical malpractice insurance was seen as a "crisis" in the late 1960s due to an increasing frequency of claims per physician and claim severity (size of award). In response, most states enacted tort reforms in order to stem the rise in claims and to assure the availability of malpractice insurance. The reforms worked temporarily but the upward trend in claims and award size resumed in the late 1970s (Danzon, 1986). Figure 14 shows that the average malpractice jury award *in real terms* was \$423 thousand in 1975 and over \$2 million in 1986, with most of the increase occurring during the 1980s.²⁸

The question arises as to how this form of insurance has contributed to rising health care costs. Malpractice insurance is a (fixed) cost to providers of medical care. Some portion of this cost will be passed along in the form of higher charges for care. Malpractice insurance premiums paid by all self-employed physicians as a percent of professional expenses rose from 7% in 1982 to 11% in 1986; average premiums increased from \$5,800 to \$12,800 during that period (American Medical Association, 1987). This translates into a total physician expenditure on liability insurance in 1986 of about \$6.5 billion. Total expenditures on physician services were \$82.1 billion and national health care expenditures were \$450.5 billion in 1986. Thus, malpractice insurance expenses are quite small relative to total health care expenditures.

Malpractice insurance is desirable in protecting health care providers from risk. Yet, malpractice insurance, just as health insurance, affects the behavior of insureds through moral hazard: fully insured providers may have reduced incentives to guard against negligent care. The proper incentives are established if premiums are perfectly experience-rated, that is, if premiums are adjusted exactly to reflect future expected losses. In that case, and with no loading and only monetary losses, full insurance coverage would be optimal (Danzon, 1985). Perfect experience rating is very costly in practice, however, as it requires

²⁸Award amounts should be netted out when computing expenditures on health care, though they rarely are.

Figure 14
Average Medical Malpractice Jury Verdict, 1975 to 1986



Source: Stiglitz (1988).

insurers to monitor the behavior of each policyholder. Less than full insurance coverage is socially optimal, paralleling the result for health insurance. Here again, this can be achieved through copayments, deductibles, or a modified form of premium experience rating in insurance contracts. Because malpractice insurance policies typically lack these features (Danzon, 1985; Sloan, 1990), this market may be characterized by overinsurance.

A well-functioning malpractice system serves as an effective deterrent to negligent behavior. As just described, effective deterrence is diminished by a less-than-optimal malpractice insurance system. Other conditions for a well-functioning malpractice system also may not hold. For example, optimal deterrence requires that patients recognize and file claims for all injuries due to negligence and unnecessary treatment. Yet, many valid claims are not filed (and invalid claims are filed). Danzon (1985) calculates that only 1 in

5 incidents of malpractice result in a claim, indicating that the cost of malpractice is much greater than the cost of malpractice claims.

Indirect costs of malpractice include outlays on legal defenses and the practice of defensive medicine.²⁹ The fear of malpractice suits may induce physicians to prescribe tests and other treatments they otherwise would not have considered justified. The quantitative importance of this effect is difficult to measure. Stiglitz (1988) reports that in 1983 the inducement effect of malpractice suits caused medical costs to be between \$15 and \$40 billion higher.

In summary, medical malpractice, the threat of malpractice suits, and malpractice insurance influence health care costs in several ways. Insurance operating costs, legal costs, and the practice of defensive medicine impart upward pressure on costs. Yet, a well-functioning malpractice system is desirable in protecting health care providers from risk and in ensuring appropriate care by deterring negligent behavior. Recent jury verdicts raise uncertainty about future expenditures due to malpractice. However, the malpractice insurance market is quite complex, precluding simple prescriptions for reform.³⁰

v. *State-mandated Coverages.* Among the other important factors that contribute to rising health care expenditures are state mandates affecting employer-sponsored health insurance plans. Most states have laws that mandate specific coverages for health insurance plans, and the number of such laws has increased significantly in recent years (Jensen and Gabel, 1988). Mandated benefits often include high-probability, low-cost events (e. g.,

²⁹Access to care might also be affected by cutbacks in risky procedures, early retirements of certain physician specialists, and refusals to treat certain high-risk patients.

³⁰The General Accounting Office is scheduled to issue a report in 1991 on alternative resolution procedures in malpractice cases, and the Physician Payment Reform Commission is studying alternatives to the current treatment of malpractice costs by Medicare.

dental care). For a given level of premium expenditures, therefore, it may not be possible to offer plans that both meet the mandates and provide catastrophic coverage.

State-mandated coverages are particularly onerous for firms that provide health insurance coverage to employees residing in different states. Such mandates tend to encourage the formation of self-insured plans which, in some cases, are more costly than purchased health insurance (Jensen and Gabel, 1988).

4. Cost Containment Initiatives

i. Public Sector. The dramatic growth in health care expenditures has resulted in many public and private sector attempts to contain further growth. Early public sector efforts were minor and had little lasting effect. For example, the freeze on prices that accompanied the Economic Stabilization Program in 1971, and that extended for an extra year (until 1974) to the health care sector, resulted in a temporary decline in medical care prices, followed by a surge in 1975. Other regulatory methods, such as the limit on Medicare physician fees (to the Medicare Fee Index) and the states' Certificate-of-Need Programs (limiting hospitals' capital expenditures) failed to have any significant effect on utilization or expenditures (Sloan, 1988). This was also true for utilization review committees established by Congress in 1972.

Until 1983, hospitals were reimbursed for Medicare patients on the basis of costs incurred, with generous upper limits set on costs. This method of reimbursement had been the usual practice followed by Blue Cross and is often blamed for fueling upward pressure on hospital costs. Under the 1983 Social Security Amendments, the Federal government made a major change in the way it paid hospitals. Under the new Prospective Payment System (PPS), all Medicare patients are classified into one of 473 Diagnostic Related Groups (DRGs) and hospital reimbursement is tied to the type of patient treated. A fixed

amount is paid to a hospital for each patient within a given DRG. As a result, the hospital has a financial incentive to produce care at a cost below the fixed price, since it can keep the difference. If the treatment cost exceeds the DRG price, the hospital loses money. The PPS method represents a form of supplier regulation, and a DRG is analogous to the demand-side indemnity type contract referred to earlier.

The apparent results of the PPS system were dramatic and immediate, as seen in Table 11. Hospital admissions, which had already been declining for persons under age 65, declined significantly in 1984, as did the average length of hospital stay, occupancy (average patient number/average beds), and the number of beds maintained. Total hospital expenditures increased at a much slower rate immediately after 1983.

Some caution must be exercised in interpreting the data in Table 11. The figures for the end of the period indicate that the declines may have slowed, suggesting only a temporary DRG effect. Moreover, actual declines may not be as large as they appear in the table, even for 1984 and 1985. The reason is that the data refer only to short-stay community hospitals (less than thirty days). If the DRG program caused short-stay Medicare patients to shift to long-stay DRG-exempt hospitals, then the average stay of all Medicare patients would not be reflected in the community hospital data. This point was made by Newhouse and Byrne (1988) who provided evidence suggesting that the average length of stay for all Medicare patients declined only slightly between 1984 and 1985. Finally, growth in total hospital expenditures moved back into double digits by 1988, reflecting both a slowdown in admission declines and (not shown in the table) increases in cost per day. The latter showed a discrete drop in 1984 but did not trend downward. This is a further indication that the DRG method may not have an effect on the long-run equilibrium rate of price increase.

Table 11
Utilization Changes in Community Hospitals, 1972 to 1988
(percent change)

Year	Admissions	Average Stay	Occupancy (percent)	Beds	Total Expenditure
1972-1980 ¹	2.1	-0.5	74.8	1.5	14.8
1981	0.8	0.0	76.0	1.5	17.9
1982	-0.2	0.0	75.3	0.9	15.8
1983	-0.6	0.0	73.5	0.6	11.0
1984	-2.8	-3.9	69.0	-0.1	5.9
1985	-4.9	-2.8	64.8	-1.6	5.8
1986	-3.2	0.0	64.3	-2.3	7.8
1987	-2.4	1.4	64.9	-2.0	8.5
1988	-0.5	0.0	65.5	-1.1	10.6

¹The data in this row are annual averages. Source: *Hospital Statistics*, 1989, American Hospital Association.

Recently, steps also have been taken to modify the manner in which Medicare reimburses physicians. Currently, Medicare uses a customary, prevailing, and reasonable (CPR) system, which bases payments on the distribution of physicians' previous charges. The CPR system has been criticized for inducing inflation in physician fees, spurring a greater volume of services, obscuring the relationship between fees and the cost of services, and being difficult to understand and awkward to administer.³¹ As a consequence, in 1985 and 1986 Congress directed the Department of Health and Human Services to develop a fee schedule that would reflect the resource costs of physician services covered under Medicare. The Omnibus Budget Reconciliation Act of 1989 enacted a resource-based fee schedule that will gradually replace Medicare's CPR system. The new Medicare fee schedule includes a relative value scale that indicates the value of each physician service

³¹The discussion in this paragraph and the next is based on Congressional Budget Office (1990).

relative to others and a geographic index that reflects cost differences among localities. The fee schedule disallows payment differences for physician specialty.

The 1989 Act also includes provisions that will establish target rates of growth in Medicare spending, limit actual charges for nonparticipating physicians, and provide federal support for research into the efficacy of alternative treatments. The provisions will be implemented gradually and become fully effective by 1996. The new Medicare fee schedule is still under development so that a full assessment of its potential effects has not yet been made. The Congressional Budget Office analyzed the impact of a preliminary version of the fee schedule and found that it will result in an increase in payment rates for visits relative to rates for technical procedures, thus favoring physicians in medical specialties over those in surgical and other specialties; and an increase in payment rates in rural areas relative to rates in urban areas. Thus, the new system will tend to reduce income disparities across medical specialties and will limit growth in Medicare spending for physicians.

A number of other Federal cost containment initiatives were implemented in the early 1980s. The initiatives undertaken, delineated earlier in Table 2, significantly affected the government's role in health care by increasing state discretion in Medicaid (chiefly through permitting states to use alternative reimbursement techniques and allowing recipients' freedom of choice of provider),³² enhancing the incentives for HMOs to accept Medicare beneficiaries, and providing for physician reimbursement based on assignment. The Federal initiatives were mainly program specific (i. e., Medicare and Medicaid), rather than attempts at reforming the health care system as a whole.

³²With the passage of the Omnibus Budget Reconciliation Act of 1981, states may seek waivers from the requirement to allow Medicaid beneficiaries to choose their providers, which may have importance in the future for the way states structure their programs.

ii. *Private Sector.* The private health insurance industry has been surprisingly slow at introducing cost-saving incentives into their benefit packages (Havighurst, 1988) and private employers, who nominally pay approximately 80 percent of all private insurance premiums, also have been reluctant to interfere with the health insurance fringe benefit (Pauly, 1988a). Nevertheless, there have been two major changes in the private sector. First, Health Maintenance Organizations, Preferred Provider Organizations and other forms of prepaid health plans have spread rapidly in recent years. Some employers now are mandating membership in one. Prepaid health plans typically result in lower total medical care expenditures, primarily through lower hospital utilization (see section II.B). Second, many employers recently began introducing or increasing deductibles and copayments into employees' insurance policies. Though empirical evidence is relatively scarce, several privately-sponsored surveys support this conclusion. Results from one such survey, reported in Davis *et al* (1990), are displayed in the box. The survey covered a representative national

Cost-Sharing Changes in Employer-Sponsored Health Plans, 1982-1985

Change	% of Companies
To Contributory Plan	21
Introduced Deductible	24
Increased Deductible	50
Introduced Copayments	22
Increased Copayments	27

Source: Davis, *et al*, 1990.

cross section of 1,253 employees in large corporations. The results suggest a substantial increase in cost sharing over the period 1982 to 1985. Other studies discussed in Davis, *et al* (1990) also support this finding.³³

³³An important caveat is that if changes in copayments and deductibles are not *real* increases, then no cost-shifting would be expected to occur.

Because increased cost sharing tends to reduce utilization (Manning *et al*, 1987), private sector initiatives are expected to result in a slowdown in the rate of increase in health benefit costs. The evidence suggests that a slowdown did occur, at least temporarily. During the decade of the 1970s, the value of insurance premiums paid by employers for group insurance policies increased at an average annual rate of about 13%. During the mid-1980s, premium increases were about 7% annually, but toward the end of the 1980s increases moved back into double digits (*Source Book of Health Insurance Data*, 1989). The relatively small increases of the early 1980s followed the introduction of increased cost-sharing. The return to larger premium increases occurred when employers began to add new benefits such as catastrophic coverage limits, home health benefits, etc., that tend to raise insurance costs.

In summary, the past decade has witnessed a number of public and private sector attempts to reign in rising health care costs. The available evidence is incomplete, as recent efforts are still developing. Nevertheless, the slowdown in the growth of personal health care expenditures that occurred in the mid-1980s suggests that some success has been achieved. For the private sector, the evidence indicates that insurance copayments and prepaid health plans and other managed care plans curtail utilization to some extent. For the public sector, regulating the suppliers (through the PPS program) reduced the provision of hospital services, but only temporarily. We have less evidence about the effects on health care costs of technological change and qualitative moral hazard discussed earlier, though these factors could be important contributors to overall health care expenditure inflation.

B. Access to Health Care

1. The Uninsured

In recent years, much attention has been given to the problem of how to fill the gaps in health insurance coverage. Persons not covered by Medicare, private insurance, or Medicaid are considered uninsured. Disagreement exists about the number of uninsured and whether there is a positive trend in the numbers. Views also differ over the reason people are uninsured and appropriate strategies for expanding coverage.

The characteristics of the (nonelderly) uninsured, shown in the box below, are believed to have remained fairly stable.³⁴ Between 1960 and 1970, the number of nonelderly uninsured also remained stable at about 26 million, resulting in a decline from 16% to 14% as a percent of the nonelderly population. By 1983, the number had risen to about 34 million, again representing about 16% of the nonelderly. Recent estimates of the number of nonelderly uninsured range between 31 million and 35 million, depending upon the data source, as seen in Table 12.³⁵ According to Wilensky, the high numbers of uninsured in the early 1980s reflected the loss of Medicaid coverage for the near poor,³⁶ the high level of unemployment through 1983, and the growth in low-paying service

Characteristics of the Uninsured:

- 50% are employed
- 75%-80% are employed uninsured if dependents are included
- 69% earn less than \$10,000/year
- 35% are in families with incomes below the poverty line
- 33% are in families with incomes over twice the poverty level
- 33% are children under 17
- 17% are nonworking adults

Sources: Wilensky (1988) and *Source Book of Health Insurance Data* (1989).

³⁴Much of the discussion in this section is based on Wilensky (1988).

³⁵The data cited from the March 1986 CPS are displayed in greater detail in Table 8-3 of U. S. Department of Treasury (1990). The Treasury study also has further discussion of the characteristics of uninsured persons.

³⁶This reduction is due to provisions in the Omnibus Budget Reconciliation Act of 1981, which increased the time period over which people could become income-eligible for Medicaid by spending their income on medical expenses and provided that fewer of the working poor would become eligible for Medicaid coverage as a consequence of the loss of cash assistance under AFDC.

Table 12
Recent Estimates of the Uninsured Nonelderly, Noninstitutional Population

Survey	Date	Number (millions)	Percent of Population
SIPP	1985	31.8	15.2
CPS	March 1986	34.8	17.4
HIS	1986	30.8	14.8

Source: Wilensky (1988).

Note: SIPP = Survey of Income and Program Participation, CPS = Current Population Survey, HIS = Health Interview Survey.

jobs early in the recovery. On the other hand, the Congressional Research Service (1988) found a change in dependent coverage to be the main reason for an increase in the number of nonaged uninsured during the 1980s. Fewer people are covered under a family member's employment as coverage rates for spouses declined and the proportion of young (under 18) children decreased (older children may not be covered as dependents).

Most of the uninsured are employed or dependents of employed persons, so strategies to address this problem are often employer-based or worker-oriented. Strategies range from the extreme of mandating that employers provide health insurance to their employees to providing incentives for employers to provide coverage. The former is likely to cause job loss and/or a reduction in wage compensation, particularly among low-wage workers. Incentive-based plans, on the other hand, may be difficult to implement without adversely affecting extant health insurance coverage patterns in a way that raises employer or employee costs.

Evidence on the uninsured is far from complete, though there seems to be agreement that the number is large and that something should be done about it. At least some of these people are uninsured as a consequence of rational decisionmaking. Many are young and

are low health risks and thereby have a small likelihood of needing hospital care. For these people, health insurance may be unattractive at current premium rates which reflect characteristics of higher risk people. The knowledge that catastrophic coverage is ultimately provided under Medicaid or as uncompensated care may also deter the purchase of private insurance, particularly for persons with low income and few assets. A preexisting health condition may effectively exclude some persons from access to health insurance, either because insurers decline to offer coverage in such cases or because the price they would charge is too high.

The above discussion suggests that people lack health insurance for a variety of reasons. Additional research is needed to quantify the relative importance of the various reasons and to investigate further why some persons decide against purchasing health insurance.

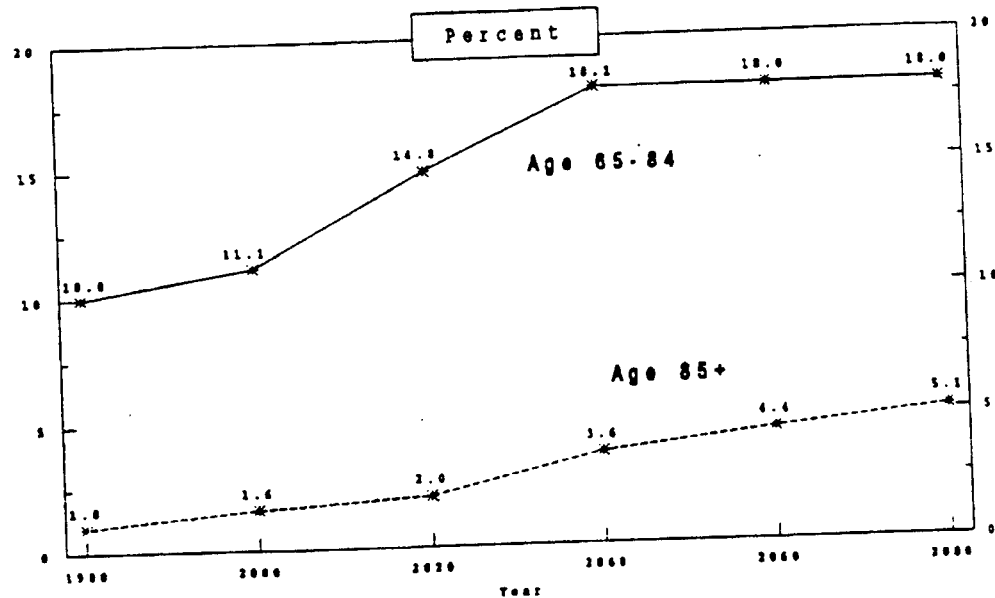
2. Long-term Care

Long-term care refers broadly to the residential, social, and medical services provided to chronically disabled persons over an extended period of time, either in their own home or in an institution.³⁷ The need for long-term care is directly related to the aging of the population, though many nonelderly also have long-term care needs. Demand for long-term care also depends upon prices of institutional and noninstitutional services, government and private insurance programs, income and assets of the aged (and other potential recipients of long-term care), and nonmarket care given by relatives.

The U. S. population is aging and the proportion of the population over age 85 is expected to grow at more than 3% per year over the next 20 years (Figure 15). Life expectancy has increased dramatically over the past several decades and is expected to

³⁷A thorough discussion of long-term care needs and financing issues is contained in U. S. Department of Treasury (1990).

Figure 15
Percent of the Total Population Age 65 to 84
and Age 85+, 1980 to 2080



Source: Social Security Administration
 Projections (1989). U. S. Department of Health
 and Human Services.

Table 13
Projected Life Expectancies for Males and
Females at Birth and at Age 65

Year	Life Expectancy at Birth		Life Expectancy at Age 65	
	Male	Female	Male	Female
1988	71.6	78.6	14.9	18.8
1995	72.1	79.5	15.4	19.3
2010	74.1	80.8	16.0	20.1
2030	75.2	82.0	16.8	20.9
2050	76.3	83.1	17.5	21.8
2070	77.3	84.2	18.2	22.6

Source: *Social Security Area Population Projections, 1989*, Social Security Administration.

continue to increase in the future (Table 13). Accordingly, it is expected that the demand for long-term care services also will continue to rise.

Currently, most long-term care is provided in a noninstitutional setting, either in the home or community. Institutional long-term care is essentially nursing home care. Nursing home care expenditures quadrupled as a percent of GNP between 1960 and 1988,³⁸ reaching \$43 billion in 1988 (Figure 16). Figure 16 also shows that the source of expenditures on nursing home care is divided evenly between the public (primarily Medicaid) and private sectors (direct payments).

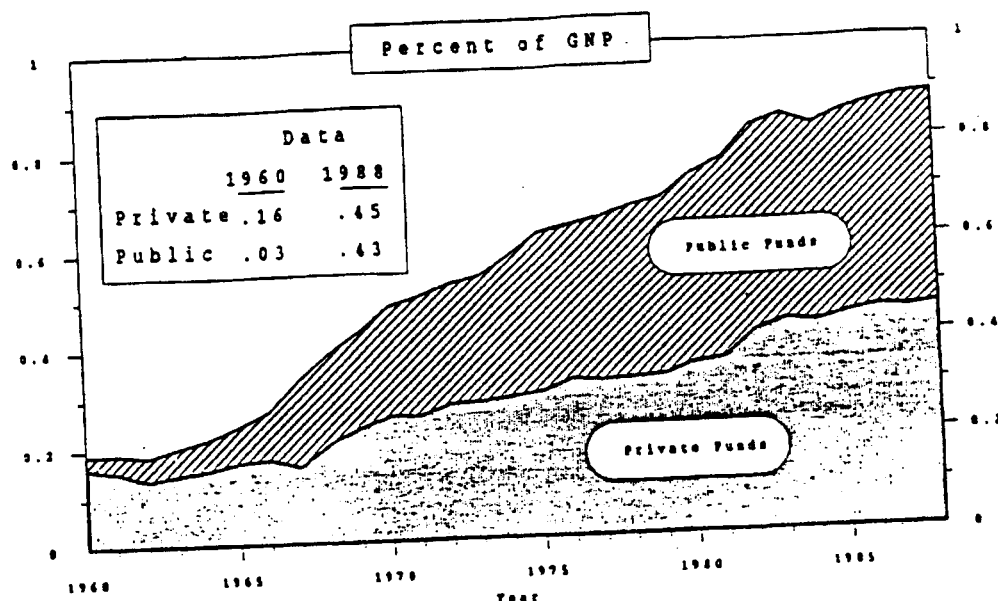
The private insurance market for long-term care has been late in developing.³⁹ Although the potential cost of a year in a nursing home can exceed \$30,000, and the chance of occurrence is about 5% for persons over age 65 (U. S. Department of Treasury, 1990), demand for insurance has been small for at least two reasons. First, some people mistakenly believe that long-term care coverage is included in Medicare or Medigap policies (insurance policies that supplement Medicare). Second, premiums are high relative to incomes of many of the elderly, in part because of high marketing costs of individual policies and the threat of adverse selection.⁴⁰ These barriers are weakening, however, as more information becomes available to purchasers and providers on the nature of the long-term care market.

³⁸Because much of the care that is provided in nursing homes is not directly related to medical needs, all nursing home care expenditures are not appropriately classified as health care expenditures. The Treasury report (U. S. Department of Treasury, 1990) carefully distinguishes health and long-term care and treats long-term care as primarily a problem of retirement income.

³⁹Individual insurance premiums of insurance companies for long-term care policies were 0 in 1985, \$87 million in 1986, and \$220 million in 1987 (*Source Book of Health Insurance Data*, 1989).

⁴⁰Pauly (1990) develops a framework in which a rational nonpoor risk-averse person may choose not to purchase long-term care insurance if the coverage serves mainly to protect bequests and/or to facilitate the substitution by children of less-preferred formal care for preferred children-rendered care. Thus, the absence of coverage does not necessarily imply market failure requiring government intervention.

Figure 16
Public and Private Expenditures on
Nursing Home Care, 1960 to 1988



Source: Health Care Financing Administration,
 Economic Report of the President, 1990, and
 Department of Commerce, 1990.

Public financing of long-term care operates mainly through Medicaid, a largely state-run program with wide variation in eligibility requirements and support levels. Medicare provides very limited coverage for nursing home care, extending coverage only to care in skilled nursing facilities under restrictive conditions. Most states have Certificate-of-Need laws, enabling control over the number of total nursing home beds in a state and thereby the number of Medicaid patients and Medicaid expenditures. With the supply of beds limited and demand growing, prices will rise for private-pay patients, leading to increased availability of beds to this group and a decreased availability to Medicaid patients.

A private insurance market will continue to develop, though Medicaid is likely to remain the principal long-term insurance for the low-income aged,⁴¹ particularly if the current limited size of the private insurance market is due to rational decisionmaking on the part of many elderly (Pauly, 1990 - see footnote 40). An important public sector role here is to provide the research needed to develop reliable definitions and measures of factors that determine the demand for long-term care, factors that are not vulnerable to the problem of moral hazard.

3. Acute Catastrophic Care. Currently, Medicare covers acute care expenses above a deductible but imposes an upper limit on fully covered hospital days (60), has no limit on copayments (20%) for physician services, and no coverage for prescription drugs. Private Medigap policies are purchased by over 70% of the elderly to fill some of these gaps in Medicare coverage. Private insurance is generally purchased individually by the elderly.

Under these provisions, a small number of elderly suffer very high out-of-pocket hospital and physician expenses. In 1986, the Department of Health and Human Services proposed adding acute catastrophic coverage to Medicare, financed by a compulsory added premium of about \$5 per month (the "Bowen Plan"). This proposal was eventually converted by Congress into the Medicare Catastrophic Coverage Act of 1988. The Act greatly expanded Part A and Part B benefits and added coverage for prescription drugs. Skilled nursing home care coverage was extended. A complicated financing scheme also was added that included both an increase in the flat Part B premium and an income-related "premium" (surcharge). Many elderly persons vigorously protested the new premium structure, and Congress repealed the Act in 1989.

⁴¹Provisions in the 1988 Medicare Catastrophic Coverage Act of 1988 loosened eligibility spend down requirements for married couples. This will tend to widen the income group that relies on Medicaid for long-term care needs.

C. Quality Assurance

The U. S. health care system has generally delivered high quality care to most (but not all) of the population. Private organizations of hospitals and health professionals have established standards and codes of behavior. The Professional Standards Review Organizations (PSROs) established in 1972 and the successor Professional Review Organizations have quality assurance as a principal responsibility. Quality assurance in the public sector occurs in professional licensure, malpractice rules, certification of drugs and medical devices, and conditions of participation in Medicare and Medicaid. However, generally there is little hard evidence about the success of quality assurance mechanisms in achieving their goals. Some measures that are intended to serve as quality control processes can frustrate cost containment efforts.

Several developments in the 1980s may bring more success to quality assurance mechanisms (Sloan *et al*, 1988). Third-party payers are now actively promoting quality assurance, motivated by rising health care costs. Advertising in health care is becoming more widespread, and data on hospital and patient outcomes (e.g. hospital-specific mortality rates) are being released. More information is likely to improve quality and quality assurance.

A related issue concerns the effect on health status of an increase in medical services. Feldstein (1988) reviews empirical evidence on this issue and concludes that, in general, the marginal effect on health status of medical care is relatively small. Apparently, lifestyles and environmental factors have a greater effect on health than medical services, particularly in high income countries where expenditures on health care are at a relatively high level. Manning *et al* (1987) find specific health gains in cases of chronic diseases that are not costly to diagnose and to cure. Better information on health outcomes, by disease categories and

specific population groups, could lead to a more efficient allocation of resources by targeting specific health programs.

IV. The Role of Government in Health Care

The American health care system is a potpourri of delivery and financing programs that does not follow any obvious ideological tendency. The roles of public and private sectors intermingle in both financing for and production of health care. This section summarizes the extent of the public role in health care and discusses some specific areas of government health care policy, many of which have been described in previous sections.

A. Extent of the Government's Role

Section III documented the rapid growth of government involvement in the financing and provision of medical care that took place following enactment of Medicare and Medicaid. The government is also involved in regulating the manner in which health care is organized and provided. The box on the next page delineates some of the areas and levels of government involvement in the U. S. health care system.

Most providers of health care are private, though public hospitals account for over 23% of hospital admissions (American Hospital Association, 1989). In the case of most public health care programs (e. g., Medicare), *care* is privately produced but the *insurance* (financing) comes from the government. Section III showed that the existing public-private mix has been fairly stable. The proportion of personal health care expenditures supported by public funds (excluding tax expenditures) has been about 40% since 1975.

The government's role in financing health care is concentrated in three areas: Medicare, Medicaid, and tax subsidies for employer-provided health insurance. The Medicare program, described in section III, spent \$92 billion in 1988 on health care for the

elderly. Medicaid is a federal-state health insurance program aimed primarily at low-income persons. The program is financed through general tax revenues from the states and from federal income taxes. Eligibility requirements and benefit coverages are established by the states, with the federal role relegated mainly to cost sharing. Wide variation across states occurs in the eligibility determination and services covered, creating concerns over equity and efficiency of the program. In 1988, the federal government spent \$31 billion for Medicaid beneficiaries and the states spent another \$24 billion. The major tax incentive for the benefit of the nonelderly is the exclusion from individual income taxes of the value of employer-paid health insurance. This incentive induces the purchase of insurance and benefits higher income persons disproportionately.

Some Areas of Government Involvement in Health Care:

1. Insurance, Financing
 - Medicare (Federal)
 - Medicaid (State)
 - VA Dept (Federal)
 - Subsidies (Federal, State)
 - Tax Incentives (Federal, State)
 - Employees (Federal, State)
2. Provision
 - Public Hospitals (State)
 - VA Hospitals (Federal)
 - Military (Federal)
3. Regulation
 - Hospitals (State, Federal)
 - Drugs (Federal)
 - Professional Licensing (Federal, State)
 - Insurance (Federal, State)

B. Government Health Care Policy

The government's role in the health care sector is pervasive. Government health care policy unavoidably affects the private market, sometimes in ways that have unforeseen, possibly undesirable, consequences. An important example of this, examined in section III, is the interaction between the effects of the tax exclusion of health insurance premiums and moral hazard in the health insurance - medical care demand link. The result is a price for health insurance that is lower than would occur in the absence of the tax exclusion, thereby creating additional demand for health insurance.

The Medicare - Medigap insurance intersection is another example. Medicare requires cost sharing for physician and hospital care. However, nearly 70 percent of Medicare enrollees purchase private Medigap insurance that covers all or most of the Medicare copayment.⁴² Thus, only 30 percent (less when Medicaid is considered) of enrollees are affected by Medicare cost controls. Medicare attempts to control costs through higher copayments may be offset by additional Medigap insurance.

Further, Medigap insurance results in a substantial increase in hospital and physician utilization (Taylor *et al*, 1988). Medicare expenses for enrollees with Medigap is considerably higher than for those with Medicare only.⁴³ The value of higher Medicare benefits are not reflected in either the Medigap premium or the Medicare Part B premium. Because the elderly without Medigap insurance are mainly low income, this unintended Medicare-Medigap outcome tends to benefit the higher-income elderly.

Still further, a number of elderly receive Medigap coverage as part of their retirement benefit, with premiums paid at least partially by employers. The portion of the premium paid by the employer is excluded from taxable income. Premiums paid directly by the elderly may be tax deductible if the 7.5% of adjusted gross income limit is exceeded. This could add a tax advantage to Medigap for relatively high-income elderly.

State laws mandating specific coverages for health insurance plans are presumably intended to protect purchasers of health insurance from inadequate coverage. Yet, mandated benefits often limit purchasers' freedom to choose less costly policies that may cover only catastrophic illness expenses. For a given level of premium expenditures, it may

⁴²Under the Baucus Amendment, the federal standards that certify Medigap policies require that they cover the Medicare copayment. This makes it difficult for the elderly to purchase a catastrophic-only insurance plan.

⁴³Based on Taylor, *et al*, Frech (1988) figured that about 14% of Medicare hospital expenditures and about 12% of Medicare physician expenditures went to this subsidy.

not be possible to offer plans that both meet the mandates and provide catastrophic coverage.

The discussion in earlier sections of this report suggested that medical services utilization is significantly affected by cost sharing (copayments and deductibles). Many private health insurance plans recognize this in having nontrivial cost sharing, upper limits on out-of-pocket expenses, and full coverage above a deductible. Medicare, on the other hand, looks quite different, with high front-end coverage and low coverage of catastrophic expenses.

The Medicaid and Medicare programs are likely to be considered in efforts to address problems relating to the large number of uninsured (mainly nonelderly) and the low level of long-term care insurance coverage. In that case, careful consideration should be given to objectives (Pauly, 1988b). In the case of the uninsured, the discussion in section III suggested that at least for some low-income people, lack of insurance may be a consequence of rational decisionmaking. In that case, public policy should look for ways to make an insurance purchase a rational decision. A solution need not imply government provision of care or government financing of such insurance. Rather, the government's primary role could be to assist in defining appropriate risk pools for the uninsured.

For the chronically ill elderly, an income distinction is also important. For many higher-income persons, long-term care insurance may effectively protect their ability to pass on desired bequests. In that case, it would be important to know whether there is a public interest in providing such protection. If not, then long-term care would be paid for first from private wealth.

Previous sections of this report emphasized the importance of (imperfect) information in the medical services market. In fact, a reason people purchase such services is uncertainty they have about the nature of illness or the appropriate form of treatment. This

uncertainty makes it difficult for consumers to evaluate price differences. There is strong evidence that consumer information does matter in the medical care market (Pauly, 1986). Asymmetric information in the markets for health insurance and malpractice insurance, through moral hazard, can cause significant price distortions. From this perspective, an important public sector role is to provide research and information in order to minimize the degree of uncertainty in the health care sector. Examples include better definitions of illnesses for insurable events, improved information on the characteristics of the uninsured, and assistance in defining and forming risk pools.

V. Summary and Conclusions

This report has summarized a large amount of information concerning the economic status of the U. S. health care sector. The information illustrates why there is widespread agreement that something needs to be done to reform the health care system. There is much less agreement over what should be done. Many reform proposals have been offered that deal primarily with the issues of cost containment and access. Others will emerge in the near future as a number of high-level committees are currently studying problems in the health care sector, as described in the introduction to this report.

This report began by describing a number of problems that are currently preventing satisfaction of one or more of the three objectives of the U. S. health care system (cost control, access, and quality). In discussing these problems, the report focused on three general topics: (A) the evolving structure of the medical care market toward increased competition; (B) the consequences of economic behavior induced by incentives that originate in the medical care sector; and (C) the role of the government in health care. The discussion led to a range of questions and concerns about health care policy as well as to

some tentative conclusions; no solutions were proffered. The main points of the report are summarized below, under the headings of the three general topics addressed.

(A). *The Evolving Structure of the Medical Care Sector*

- The medical care market is characterized by imperfect competition, imperfect information, third-party payers, and an unusual seller - purchaser relationship. Medical care services can be distinguished by the relative degree of information possessed by sellers and purchasers.
- Moral hazard in the health insurance market arises because insurance lowers the apparent price the insured has to pay for additional or higher quality medical care, causing the consumption of medical care to be greater than if the full price were paid directly. The problem is more evident in health insurance than other forms of insurance due to the difficulty in objectively defining the state of illness and the consequent need to base insurance benefit payments on the amount of medical expenditure. Moral hazard has a quantitative dimension (too much medical care) and a qualitative dimension (too-high quality of care). The result is upward pressure on the price and quantity of health care.
- The medical care and medical insurance markets are becoming more competitive, facilitated by Federal initiatives in the application of antitrust laws in the physician services market and in the loosening of restrictions on prepaid health plans. Managed care systems are continuing to develop. These systems emphasize provider incentives more than do traditional fee-for-service plans, and they enhance the monitoring and measurement of treatment outcomes. As a consequence, the information market is improving. Nevertheless, because much of the change in the health care sector has occurred quite recently, the consequences have not yet been fully evaluated.

(B). Consequences of Behavior in the Medical Care Market

- The escalation of health care costs has particularly serious implications for Federal finance. Health care expenditures account for about 15% of total Federal outlays. Medicare Part A expenditures are projected to rise dramatically as a percent of GNP over the next 40 years. Medicare Part B also is projected to grow faster than the economy and could eventually become the largest social insurance program. Medicaid expenses also are projected to grow as the population ages and the demand for long-term care rises.
- The increasing relative importance of the U. S. health care sector is part of a general trend among industrialized nations. For 22 countries, the health expenditure/gross domestic product share rose from 3.9% in 1960 to 7.5% in 1987. The growth in the proportion of GDP devoted to health care slowed significantly between the 1965-75 and 1975-87 time periods. During the earlier period, the share for twelve OECD countries was growing faster than in the United States; during the more recent period, the U. S. share grew faster than most other countries. International comparisons suffer from severely inadequate data, particularly on health care treatment outcomes.
- The public share of total health care expenditures increased significantly during the period 1960-1975 for most OECD countries. Beginning around 1975, the public share stabilized in most countries, or even declined slightly. The OECD data suggest some common experiences in the behavior of health care expenditures across countries. The health care systems are quite different, however, and specific comparisons are extremely difficult to make.
- Medical care price inflation has been an important factor in health care expenditure growth, in the United States and other countries. Real expenditure change (population and utilization) has grown historically, resulting in a widening real health care expenditure-real GNP gap. Health expenditures are thus absorbing an increasing share of the nation's

resources. Most of the real expenditure change in the United States and other OECD countries has occurred in utilization growth.

- Private and public insurance programs have grown rapidly over the past thirty years. One consequence is that, because of moral hazard, the demand for health care has been larger than otherwise, thereby contributing to rising health care expenditures. Recent evidence suggests that the insurance effect on the *demand* for health care has been modest. Further research is needed to quantify the insurance effect on the *provision* of health care.
- The tax subsidy to private health insurance reduces the price of insurance, thereby resulting in increased health care consumption. The value of the subsidy rises as taxable income increases.
- Medical malpractice, the threat of malpractice suits, and malpractice insurance influence health care costs in several ways. Insurance operating costs, legal costs, and the practice of defensive medicine impart upward pressure on costs. Yet, a well-functioning malpractice system is desirable in protecting health care providers from risk and in ensuring appropriate care by deterring negligent behavior. The malpractice insurance market is quite complex, however, precluding simple prescriptions for reform.
- Public and private sector efforts at cost containment have produced some success in limiting health care expenditure increases, though the effects may be temporary. For the public sector, regulation of suppliers (through the PPS program) temporarily reduced the provision of hospital services; for the private sector, evidence indicates that insurance copayments and prepaid health plans curtail utilization to some extent.
- Approximately 85% of the U. S. population has some form of health insurance coverage. The remaining 15% lack insurance for a variety of reasons. For some persons, nonpurchase of insurance may be a rational decision. Disagreement exists over appropriate strategies for

expanding health insurance coverage. Further research may help to quantify the relative importance of reasons why people lack insurance.

- Most elderly lack private insurance coverage for long-term care. An essential difficulty is the lack of reliable definitions and measures of the need for long-term care. For some higher-income people, not purchasing long-term care insurance may be a rational decision.

(C). Government's Role in Health Care

- All levels of government are involved in all aspects of health care to some extent, including financing, delivery, and regulation. The government's role in financing health care is concentrated in tax expenditures for the purchase of private health insurance, Medicare, and Medicaid.
- Most states have laws that mandate specific coverages for health insurance plans, and the number of such laws has increased significantly in recent years. Mandated benefits often include high-probability, low-cost events (e. g., dental care). For a given level of premium expenditures, therefore, it may not be possible to offer plans that both meet the mandates and provide catastrophic coverage.
- Government health care policy unavoidably impacts the private market. An example is the interaction that arises from the tax exclusion of health insurance premiums and moral hazard in the health insurance market. The consequence is additional demand for health insurance and added pressure on health care costs.
- Medicare's attempts to control costs through higher copayments may be offset by additional Medigap insurance. Also, Medigap insurance results in higher hospital and physician utilization, resulting in higher benefits that are not reflected in either Medigap or Medicare premiums.
- The Medicare program has high front-end coverage (and a low deductible) but lacks the stop-loss features common to private health insurance plans.

- In addressing the access issues such as the uninsured, long-term care, and acute catastrophic care, careful attention must be given to objectives. It will be important to distinguish targeted groups and to further investigate the reasons some groups do not purchase insurance.
- The government can play a significant role in providing research and information in order to reduce uncertainty in the health care sector. Examples include better definitions of illnesses for insurable events, improved information on the characteristics of the uninsured, and assistance in defining and forming risk pools.

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